FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

Volume 31—Number 16 APRIL 18, 1959 1 Year $5, 2 Years $8

USDA Announces Modification of Flax Crush Plan

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—The U.S. Department of Agriculture this week announced a toll crush contract with flaxseed crushers wherein Commodity Credit Corp. will take over residual oil on a competitive bid basis and the crushers will retain the linseed oil meal. This confirms a previous report in Feedstuffs.

Under the toll arrangement, crushers will have access to CCC-owned stocks of flaxseed at the support price of $3.09 bu. for grade No. 1 flaxseed, Minneapolis or Duluth.

The competitive bidding basis, according to USDA, will be a requirement that processors will deliver to CCC within a limited period a linseed oil equivalent to flaxseed purchased—20 lb. of oil to a bushel of flaxseed. The CCC acceptance price will be the basis of competitive bidding.

The new program represents a modification in a previously announced flaxseed crushing program to help relieve the tight grain storage situation in the northern Great Plains area.

Under the modification, as noted above, processors will submit competitive bids offering only the flaxseed oil obtained from crushing flaxseed bought from CCC. Originally

(Turn to FLAX, page 97)

1959 ANALYSIS TABLE IN THIS ISSUE

FEEDSTUFFS' 1959 Feed Analysis Table, copyright by Charles H. Hubbell, Chicago, feed consultant, appears on pages 26-27 of this issue.

Reprints of the table and of the notes that accompany it may be obtained from Feedstuffs, P.O. Box 67, Minneapolis 40, Minn. The price for single copies is 15¢; for orders of 3 to 5 copies, 10¢ each, and in quantities of 10 or more, 5¢ each. Colleges and experiment stations will be furnished a reasonable number of reprints for their own use free of charge on request.

Please note that in the Metabolizable Energy section of the "Notes on the Feedstuffs Analysis Table," the first sentence of the last paragraph should be corrected to read "per pound" rather than "per gram."

To Emphasize Role of Management, Sanitation

WASHINGTON—Manufacturers of animal health and nutrition products and commercial feed are launching a nationwide campaign to re-emphasize the proper role of good sanitation and management practices in production of livestock and poultry.

This announcement was made here at the annual meeting of the Animal Health Institute by D. L. Bruner, executive secretary, and W. E. Glennon, president, American Feed Manufacturers Assn. They said their boards of directors had approved the joint policy statement and urged their members to emphasize the program through their promotion and advertising, sales organizations, dealers and feeders. Membership of AHI and AFMA represents approximately three-fourths of the total animal health and nutrition products and feed manufactured in the U.S.

The policy statement endorsed by the two groups is as follows:

"The development of modern medicated feeds, which combine the most advanced knowledge of nutrition with the latest discoveries in disease control, has put products of unprecedented efficiency into the hands of the American livestock and poultry producer.

"These feeds have made possible the vast increase in the production of nutritious livestock and poultry products at prices which encourage high levels of consumption by the public.

"But these feeds never were designed to be a substitute for sound management and sanitation, and great as the accomplishment of these products has been, they can perform efficiently only when employed in connection with good management and in accordance with adequate feeding directions.

"Mindful of these facts, the American Feed Manufacturers Assn. and the Animal Health Institute jointly agree to this statement of policy regarding the promotion and use of medicated feeds;

"That manufacturers of medicated feed ingredients and manufacturers or mixers of medicated feeds, should

(Turn to AFMA-AHI, page 97)

Contrary to Predictions

Led by South, Egg-Type Chick Output Shows Gain

WASHINGTON — In spite of the lowest egg prices since 1941, hatchery reports to date indicate the predicted cutback in production of chicks for laying flock replacement is not being realized.

(Also see story on egg production on page 4.)

In fact, according to a U.S. Department of Agriculture report this week, hatchery output of egg-type chicks in March was up 6% from a year earlier, and little change from a year ago is indicated for the important month of April.

The important north central region and some other areas are showing little change, or in some cases decreases, from a year ago in production of egg-type chicks, but the south Atlantic and south central and Pacific areas are showing increases.

From this and other indications, it appears that the development of new egg programs, for one thing, is having its effect.

If trends continue, the laying flock next season—instead of being down or showing no change, and possibly

(Turn to CHICK OUTPUT, page 101)

Cattle on Feed Show 8% Increase Over Year Ago

WASHINGTON — An increase in cattle feeding activity is shown in the U.S. Department of Agriculture's report this week on numbers of cattle on feed on April 1.

In 13 feeding states for which comparative data are available, the number on feed was up 8% from a year ago.

However, the important Corn Belt showed a smaller increase than this, and some of the important states showed no increase. Five western states, on the other hand, reported a sharp 23% increase over a year earlier.

Marketing intentions indicate that marketings in the April-June quarter in the 13 states will be up 8% from a year earlier.

Some details from the report, which now covers 21 states, follow:

Cattle on Feed in 21 States: The number of cattle and calves on feed April 1 in 21 major feeding states totaled 5,854,000 head. In these same 21 states, 6,225,000 head were on feed Jan. 1, 1959.

13 States: In 13 feeding states for which comparable data are available, 5,242,000 head were on feed April 1—8% above a year earlier and a record high April 1 total for the series which began in 1955. The January-April decline of 4% for the 13 states is in line with the decline of last year but less

(Turn to CATTLE, page 101)

FEEDSTUFFS *Features This Week*

PRODUCTION: The last in a series of Golden Year features covers progress in feed production, starting on **page 10.**

FEED MIX PROBLEMS: An economist for USDA discusses linear programming and price mapping on **page 18.**

ADVERTISING: An article describing the use of local advertising by a Minnesota firm appears on **page 32.**

CUSTOMER SERVICE: How an Ohio firm is building its feed volume with improved customer service is told on **page 52.**

— REGULAR FEATURES —

Feed Control Comment	24	Convention Calendar	68
Putting Research to Work	28	Worth Looking Into	74
Joe Brooks	42	Classified Ads	94
Feed Service Bulletin Board	46	Feed Markets in Detail	98

March Production Of Poults Shows Increase Over '58

WASHINGTON — Production of both heavy and light breed poults showed an increase in March over March, 1958, the U.S. Department of Agriculture reports. Light breeds were up 53% for the month and all heavy poults increased 1%, the report said.

Heavy white breed production during the month was 1,908,000, compared with 1,348,000 a year earlier —an increase of 42%. But other heavy breeds (mostly broadbreasted bronze) dropped from 9,600,000 in March, 1958, to 9,132,000 this year, a drop of 5%.

For the first three months of 1959, the total production of all heavy breed poults was 18,063,000, about the same as the previous year. The hatch of heavy white breed poults, totaling 4,192,000 for the quarter, compared with 3,046,000, an increase of 38%, was offset by the cut in production of other heavy breeds. Production of other heavy breeds for the quarter was 13,871,000, compared with 15,032,000 a year earlier.

Light breed poults hatched in

(Turn to POULTS, page 97)

FEEDSTUFFS

A WEEKLY NEWSPAPER

Published by THE MILLER PUBLISHING CO.

2501 Wayzata Blvd., Minneapolis, Minn.

Address Mail to: Box 67, Minneapolis 40, Minn.

Telephone FRanklin 4-5200 - All Offices Serviced by Bell System Teletype

EDITORIAL STAFF—George L. Gates, Editor; Roger Berglund, Managing Editor; John Cipperly, Washington Correspondent; Emmet J. Hoffman, Merchandising Editor; John S. Franklin, James E. Sharon and James H. Ross, Editorial Assistants.

WASHINGTON CORRESPONDENT—John Cipperly, 604 Hibbs Building, Washington, D. C., Telephone, Republic 7-8534.

ADVERTISING STAFF—Wilfred E. Lingren, Advertising Director; Carl R. Vetter, Advertising Department Manager; Bruce A. Kirkpatrick, Advertising Production Manager; Leland C. Hubert, Assistant Advertising Production Manager; R. Dale Swenson, Promotion Manager.

BUSINESS STAFF—Martin E. Newell, Chairman of the Board of Directors; Milton B. Kihlstrum, President and Treasurer; Wilfred E. Lingren, Executive Vice President; Don E. Rogers, Vice President; Paul L. Dittemore, Vice President; Donald G. Neth, Secretary; T. A. Gaden, Circulation Manager; James G. Pattridge, Assistant Treasurer; Richard L. Ostlund, Office Manager; Walter O. Buchkosky, Production Superintendent.

BRANCH OFFICES—SOUTHWEST, Martin E. Newell, Manager; Thomas E. Letch, Assistant Manager, 612 Board of Trade Bldg., 1005 Wyandotte St., Kansas City 5, Mo. (Tel. Victor 2-1350); EASTERN STATES, Paul L. Dittemore, Manager; George W. Potts and James W. Miller, Advertising Sales Representatives, Suite 3214, 551 Fifth Ave., New York 17, N. Y. (Tel. Murray Hill 2-2185); CENTRAL STATES, Don E. Rogers, Manager; Henry S. French, Assistant Manager; Amos W. Standish, Advertising Sales Representative, 2832 Board of Trade Bldg., 141 W. Jackson Blvd., Chicago 4, Ill. (Tel. Harrison 7-0515); NORTHWEST, Paul A. Anderson, Advertising Sales Representative, P. O. Box 67, Minneapolis 40, Minn. (Tel. Franklin 4-5200).

Correspondence regarding subscriptions, changes of address, etc., should be sent to Circulation Manager, Feedstuffs, Box 67, Minneapolis 40, Minn. Single copies 50¢. Subscription rates: One year $6, two years $8, in the U.S., U.S. possessions, Canada and Pan-America. Add $3 a year for postage to other countries. Readers are urged to give prompt notice of change of address and to anticipate future changes by at least two weeks' advance notice. Ask postman for form 22-S. Feedstuffs accepts subscriptions only through its own offices; no subscription solicitors are employed or recognized. Associated publications: The Northwestern Miller, The American Baker, Milling Production, Croplife, Farm Store Merchandising.

Entered as second-class matter Feb. 25, 1947, at the post office at Minneapolis, Minn., under the Act of Mar. 3, 1879

The regional circulation of this issue is concentrated in the northeastern states

Intelligence

PART OF THE BLAME FOR EMPLOYMENT of unsound feed booking practices was attributed in a recent discussion of the problem to "faulty intelligence." By this the person who made the comment was referring to the passing along of inaccurate reports of what a competitor was doing in the way of booking arrangements. Response of manufacturers to false reports of this type with more liberalized terms "to meet the competition" sometimes has resulted in putting into practice deals which should never have been made.

The snowball effect of this type of response has serious implications tor all concerned. To the extent that this sort of thing occurs, management that fails to check the accuracy of reports about competitors must accept responsibility for errors of judgment. Similar failures to "check out a story" have been a factor in development of too liberal financing of feeders, credit men have pointed out.

MORE SERIOUS THAN THIS, however, is the instigation of unsound booking practices without reference to even a false report of what others are doing and without honest consideration of where extension of this type of operations can lead.

The sudden and unexpected swings in prices that manufacturers encounter in purchasing ingredients are well known, and lacking full protection against these changes, the manufacturer who makes long-term commitments for formula feed, with buyers guaranteed against decline, is playing a risky game. It is risky not only from the standpoint of the individual transactions, but it involves risks which endanger sound trading principles and good customer relations.

There is no "faulty intelligence" involved in the current effort of the American Feed Manufacturers Assn. to secure voluntary acceptance of the new Feed Merchandising Plan. The appeal has been made directly to members. The points of the plan are precise, and endorsement of the plan has been stated in a positive way by many of the industry's leaders.

Every feed manufacturer should review again the plan and determine whether he can, in all honesty, fail to agree with its principles. Here are the main points:

1. Bookings of poultry, turkey and hog feeds to be limited to 60 days with minimum carrying charges of 50¢ per ton per month (or fraction thereof) to apply after 30 days.

2. Bookings of dairy feeds to be limited to 90 days with minimum carrying charge of 50¢ per ton per month (or fraction thereof) to apply after 60 days.

3. Seasonal bookings of beef cattle and sheep feeds to be limited to 180 days with minimum carrying charge of 50¢ per ton per month (or fraction thereof) to apply after 120 days.

4. No sale or booking to be made with price guaranteed against market decline.

5. No contract to be repriced, rewritten, resold or transferred.

6. If buyer defaults on contract, buyer shall with respect to the unshipped balance pay the market loss, if any.

STRONG SUPPORT OF THE PLAN is indicated by a number of letters received by Feedstuffs since the AFMA announced its recommendations. This correspondence appears in our "Letters" column on page 7. You are invited to read the arguments in favor of the plan as expressed by these industry executives. Comments from other readers also are invited.

Straightening out of the industry's sales methods is a responsibility that must be shared by everyone in the industry. There should be no "faulty intelligence" concerning the intentions of all feed manufacturers. Your voluntary approval of the plan, expressed to the AFMA's office, will be a key building block in the foundation of the feed industry's future stability and stature.

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Steady, rather colorless demand appeared to be the rule in the formula feed industry this week. While business has not been bad, it has not been as good as feed manufacturers had expected, and they are looking forward to more activity in May. Chick starters and egg feeds are spotty, hog feed demand is generally very good, and dairy feeds showed an upturn this week in some areas because of weather conditions. Spring field work is blamed for some of the dullness, and it is thought that completion of the spring work will bring more interest. Corn prices remained relatively strong this week, but some high protein feedstuffs dropped in price. The hog-corn index in Chicago dropped to 12.7 during the week ending April 15. It was 16.6 a year earlier. The wholesale feedstuffs price index declined 1.1 points to 88, compared with 86.8 a year earlier. The feed grain index was 70.2, compared with 70 a week earlier and 71.1 a year earlier. (Ingredient prices in detail on pages 98-100.)

Northwest

Business was reported to be "about steady with last week" by feed mill representatives. Demand has been running "hot and cold" day by day, they reported, but the past two or three weeks have been averaging out about even.

Sales are reported to be better than they were in March, but most representatives now are looking forward to a sharper increase during the coming two or three weeks.

Hog feed is in very good volume and poultry starters are good for some mills and disappointing for others. "Rapid disappearance of the small farm flock and the low egg prices apparently are bringing farmers to the decision they knew they would have to make ultimately—that a small flock doesn't pay," one representative said.

Dairy feed has shown some improvement during the past week. Lack of moisture has held down growth of grass. A general rain in the area late this week, however, is expected to green up pastures and to give farmers a little more optimism.

Most firms are running their routine shifts with some overtime. There hasn't been any urgency in demand, however.

Prices for the coming week are expected to be a little lower on the concentrates and about steady for low proteins.

Southwest

With a few exeeptions, formula feed business in the Southwest continues on the slow side this week. Generally, it shows a little more life than last week, but mills are able to turn out enough feed to fill their orders by running five days, and there are a few that say they are running only partial crews on the five days. Order backlogs are non-existent in many instances, and amount to a couple of days of production in other cases.

Chick starter business continues to be disappointing. Low egg prices and the cold spring get most of the blame. There still is no agreement as to whether better business will develop a little later or whether it will continue to be on the slow side.

Pig starter volume is good, although hog concentrates are not moving so well now as earlier for some mills. The level of starter volume seems to point to the fact that there are a lot of baby pigs and that perhaps they are a little later this year than usual.

Turkey starters are still not moving at a rapid pace. However, the volume is becoming more of a factor in the over-all business picture. Laying feeds are continuing to move about as they have been.

There is still a little cattle feed business, indicating that perhaps customers had not completely covered their requirements or that pastures have been a little slow in developing.

Prices for next week are mixed; high protein feeds may be down as much as $2 ton while high carbohydrate feeds may be up as much as $1 and feeds in the middle will be unchanged.

Northeast

Mounting demand for chick starter, growing and turkey feeds bolstered formula feed sales. Egg mashes, however, continued to lead in tonnage.

Dairy feed demand held up pretty good for this time of year. Pastures are very wet and they have been held back by unseasonally cool weather.

End products show no sign of an upturn. Eggs continued to slide and are now at an 18-year low and levels are likely to get worse before they get better.

Broiler prices held unchanged at 15¢ lb. on the bottom of the price range but the top bracket shaded off to 17¢ lb. from 18¢ in the previous week.

Milk held unchanged but lower prices are in the offing as producers begin preparations for the grass season.

The ingredient market was irregular, with wide swings either way, especially in soybeans.

Corn rose 1 to 1½¢ but backed down and ended unchanged to ½¢ higher. Oats made a similar move. Feed wheat and barley held unchanged.

Animal tallow continued to react and was off ⅛¢ to 7¼¢ lb.

Soybean oil meal dropped $3 to $3.50, with both 44% and 50% sharing in the decline. Nearby linseed oil, however, rose $1.50. Cottonseed oil meal and gluten meal held steady.

Fish meal is gradually coming down. Meat scraps were unchanged.

Distillers' grains were weak and off $1. Alfalfa meal moved up 50¢ to $1 and hominy feed gained $1.50. Brewers' grains and gluten feed held steady.

Bran and middlings worked higher on spotty demand and sharply reduced flour mill running time.

Running time of formula feed manufacturers averaged 40 hours last week.

Southeast

Feed demand has been about unchanged for the last few weeks. Baby chick placements in the north Georgia broiler producing area were reduced last week by approximately 250,000. Many of the smaller feed mills are cutting down on their placements of chicks, due to the market conditions.

The price of broilers dropped 1½¢ to 2¢ lb. this week, making it 14½¢ to 15¢ lb. f.o.b. the farm. It is reported that between 17¢ and 18¢ lb. is required to raise broilers and, at the

(Turn to MARKETS, page 103)

You are invited to inspect our new Dallas facilities while attending the Texas Feed Manufacturers' Association Convention in Fort Worth. Visitors welcome any time

Now serving the Southwest

PETER HAND'S NEW TEXAS PLANT

Providing the highest quality

- VITAMINS
- ANTIBIOTICS
- PETER HAND PREMIXES
- CUSTOM PREMIX SERVICE

For overnight service in the Southwest . . .
Dallas telephone: RIverside 2-5969
Dallas teletype: DL 620

PETER HAND FOUNDATION

1000 NORTH AVENUE, CHICAGO 22
130 HOWELL STREET, DALLAS 7

March Egg Production Shows 9% Increase Over Year Ago

WASHINGTON—The nation's laying flock produced 5,952 million eggs during March—a sharp 9% increase over the same month of 1958—the U.S. Department of Agriculture reports.

The increase came from a 6% boost in March production per layer in a total laying flock of 3% more birds than the same month of 1958. Egg prices have moved down sharply in the face of large output.

Production per layer in March at 19.1 eggs was a record high for the month. A year ago the production rate was 18. The number of layers April 1 was 308,615,000, compared with 300,459,000 on April 1 a year earlier. (See Table 1.)

In addition to the increased flock size, the USDA said the increase can be attributed to several factors. Weather during March was more favorable this year than it was a year earlier. It was also pointed out that the proportion of pullets in the laying flock is back to normal and much higher than it was a year ago when farmers held more hens than usual in an effort to retain flock numbers.

At the same time, the report said, the trend toward larger, well-managed flocks and improved laying strains continues.

The rate of egg production was increased in all sections of the nation.

Numbers of layers on March 1 showed increases in all regions but the west north central, which stayed the same as a year earlier. Increases were 7% in the south Atlantic, 6% in the south central, 4% in the West, 2% in the east north central and 1% in the north Atlantic.

The rate of lay April 1 was 63.3 eggs per 100 layers, compared with 60.9 on April a year earlier. This is an increase of 4%. All regions showed the increases.

TABLE 1. Hens and Pullets of Laying Age and Eggs Laid Per 100 Layers on Farms, April 1

Year—	North Atlantic	E. North Central	W. North Central	South Atlantic	South Central	Western	United States
	Hens and Pullets of Laying Age on Farms (thousands)						
1948-57 (average)	52,198	63,642	92,501	31,600	62,824	34,561	327,326
1958	50,766	57,406	83,167	31,212	41,728	36,180	300,459
1959	51,025	58,635	83,571	33,477	44,437	37,470	308,615
	Eggs Laid Per 100 Layers on Farms (Number)						
1948-57 (average)	58.8	59.9	61.5	58.9	58.8	60.2	59.9
1958	58.0	60.7	63.5	59.7	58.7	62.7	60.9
1959	60.9	63.3	65.9	62.4	60.8	64.9	63.3

Broiler Breeders Boost Output 11%

WASHINGTON—Placement of pullet chicks for broiler hatchery supply flocks by leading primary breeders totaled 3,450,000 chicks during March, the U.S. Department of Agriculture reports. This total is up 11% from March, 1958.

Of the total, 3,209,000 were domestic placements. This compares with 2,256,000 chicks placed in February and a revised total for January of 1,884,000.

The totals include pullet chicks sold during the month, plus the number of pullet chicks expected from eggs sold during the preceding month.

Primary breeders included in this report account for a very large percentage of the total supply of replacement pullets for broiler hatchery supply flocks.

Nopco to Distribute Shell Antioxidant

NEWARK, N.J.—Nopco Chemical Co., Newark, has been appointed exclusive distributor for the feed grade of butylated hydroxy toluene, antioxidant product of Shell Chemical Corp.

The product is used in the feed and fish meal industries, and will be sold separately, as well as incorporated in Nopco's standard and custom premixes.

The antioxidant is used in animal feeds to help preserve carotenoid pigments and fat soluble vitamins. It is said to be especially effective in preserving vitamin E. It also minimizes build-up of high temperatures due to oxidation and aids in insuring the production of high quality fish meal, officials said.

MRS. LAMOUREUX KILLED

MORRISVILLE, VT. — Mrs. Hermance A. Lamoureux, 35, wife of Charles Lamoureux, manager, Morrisville Grain Co., was killed recently when she was thrown from the cab of a pickup truck as it plunged over a 30-foot embankment and overturned in Bakersfield. Her three-year-old daughter, Elaine, suffered shock, cuts and bruises in the accident.

Fire Shuts Down Nebraska Feed Mill

HUMBOLDT, NEB. — A fire the morning of April 17 caused damage in the O. A. Cooper Co. feed plant here which is expected to keep the mill out of production for about three weeks.

In the meantime, according to Guy L. Cooper, Jr., president, the company will fill orders from its mill at Beatrice, Neb.

The fire, of undetermined origin, was discovered by employees as they went to work in the morning. It centered around the hopper scales over the batch mixers in the mill. Two scales were destroyed, and there was damage from water used to extinguish the fire. Total damage was estimated at $30,000 to $35,000.

An extra crew has been sent to Beatrice, and the mill there will run 24 hours a day, Mr. Cooper said. The company expects to take care of production needs in this way until the necessary new parts and equipment have been installed at Humboldt.

Exchange Election Set

SAN FRANCISCO—The San Francisco Grain Exchange has scheduled the election of officers and directors to serve for the 1959-60 term. It will be held May 19. Harry Clow, A. H. Ascherman, Inc., is outgoing president, and he will be succeeded, if tradition is maintained, by his vice president, Eugene R. Warren, Warren Grain Co.

Mother Passes Away

ST. PAUL—Mrs. Martin W. Newell, 83, mother of Martin E. Newell, manager of Feedstuffs' Kansas City office, died April 14. Other survivors include her husband and two brothers, Edward Early of Minneapolis and Joseph Early of New Richmond, Wis.

FIRE DESTROYS MILL

DELAVAN, WIS. — The Millard Feed Mill and an adjacent machine shop were destroyed by fire recently. The feed mill, owned and operated by Earl Cook, had losses estimated at $80,000.

Thomas W. Staley

NEW DIRECTOR — Spencer Kellogg & Sons, Inc., Buffalo, N.Y., has elected Thomas W. Staley a director, Howard Kellogg, Jr., president, has announced. Mr. Staley is president and treasurer of the Staley Milling Co., Kansas City, a division of Spencer Kellogg. The Buffalo firm purchased Staley Milling last October. Mr. Staley is also president and treasurer of Staley Investment Co., Kansas City, as well as assistant secretary of Spencer Kellogg.

California Group's Meeting April 23-25

SAN FRANCISCO—A seminar and talks of interest to the grain trade will be presented during the convention of the California Hay, Grain & Feed Dealers Assn. here April 23-25.

The April 24 program will include Roland Ballou, Washington, D.C., and Earl C. Corey, Portland, Ore., both of the Commodity Stabilization Service, and A. Price Feuquay, president, National Grain Trade Council. Judd Evans, staff assistant to the CSS general sales manager, will conduct a seminar for association members interested in export programs on wheat and feed grains.

The convention will open the morning of April 23 with registration at Fairmont Hotel and a golf tournament. A bowling tournament will follow in the afternoon. The business session is scheduled for the morning of April 24. Introduction of new officers and directors and entertainment at a breakfast April 25 will close the convention.

Servicemen's Workshop Planned at Colorado

FT. COLLINS, COLO. — Colorado State University will sponsor a feed and hatchery servicemen's workshop at Ft. Collins, Colo., April 27. It is scheduled to start at 9:30 a.m. and continue until 4 p.m.

Ted Hartung, extension poultryman, is chairman of the workshop. Subject matter to be covered is: Poultry housing and equipment, including poultry house design, ventilation, positive and negative pressure temperature, humidity, insulation and how to calculate it and cage and floor units.

The workshop is to be concluded with "what should be the housing and equipment guide for feed firms and hatcheries in Colorado."

The workshop is one in a series to be conducted through the cooperation of the feed industry and Colorado State University, a Midwest Feed Manufacturers Assn. bulletin points out. Specific cooperators include the Colorado Poultry Improvement Board, the State Hatchery Assn., the Colorado Grain Milling & Feed Dealers Assn. and the Midwest Feed Manufacturers Assn.

Tranquilizers Said To Benefit Broiler Growth, Conversion

ATLANTIC CITY — Tranquilizers are of some benefit in improving the growth rate and feed conversion of broilers, it was reported at a meeting of the American Institute of Nutrition in Atlantic City.

J. C. Fritz, director of nutrition research for Dawe's Laboratories, Chicago, said that sodium bromide, one of the oldest sedatives, performed as well as some of the newer tranquilizers. He noted that bromine has been suggested as an essential nutrient, but that this is the first evidence that the agent in sedative dosages has beneficial growth results.

Interest in drug additives stems from the comparatively artificial conditions under which broilers are produced, the speaker continued. Crowding, disease problems, high energy rations, and even fast growth introduce stress conditions under which tranquilizing drugs might be expected to improve feeding results, Mr. Fritz said.

In contrast to a report from Iowa that a thyroid depressant drug had beneficial results in cattle fattening rations, Mr. Fritz noted that these goitrogenic agents were of no benefit, and in some cases detrimental, in broiler rations.

Vitamin A

Drs. Robert L. Squibb and William Sanslone, department of poultry science, Rutgers University, reported that vitamin A protects chicks against the ill effects of an infectious respiratory disease, and that giving the vitamin A before exposure to the infection was more effective than using it after exposure.

The scientists reported that Newcastle disease significantly depressed growth rate and increased mortality and water required per gram of feed consumed, and said that vitamin A prophylaxis was superior to therapy for maintenance of feed utilization

(Turn to TRANQUILIZERS, page 101)

Feed Microscopists Group Will Meet in Quincy April 27-29

QUINCY, ILL. — Completed program plans have been announced for the annual meeting of the American Association of Feed Microscopists April 27-29 at Quincy.

Representatives of government, university and industry are included as participants in the three-day sessions, according to A. J. Gehrt, Moorman Manufacturing Co., program chairman. Moorman will serve as the "host" firm for the meeting.

Nearly 100 members of the rapidly growing AAFM organization are expected to attend the group's seventh annual meeting at the Lincoln-Douglas Hotel in Quincy.

AAFM membership is comprised of individuals who are interested in the improvement of livestock feeds through the development of microscopic and allied methods for the study of ingredients.

A feature of the microscopists meeting is a workshop session on several phases of microscopy, and which will also have a "beginners corner" for those in attendance who are not familiar with techniques involved.

Non-members of the association included on the AAFM program include special agent Richard Flach of the FBI laboratories, speaking on the uses of microscopy in scientific crime detection; L. L. McKinney of the U.S. Department of Agriculture, Peoria, Ill., research laboratories, who will discuss feed utilization research; Dr. Joseph Kastelic, University of Illinois, reporting on future trends in feed

(Turn to MICROSCOPISTS, page 101)

What is AGROZYME

AGROZYME* is a mixture of enzymes specially formulated for the feed industry. The addition of AGROZYME to poultry rations has been shown to raise the feeding value of western barley to almost that of corn.

It now appears that the addition of this enzyme to beef cattle rations—(including those containing stilbestrol)—may improve growth, efficiency of feed conversion and reduce feed costs to a point of great commercial significance. For example, when AGROZYME was fed at the rate of .0075 pound per head per day for a 120-day feeding period, the cost of 0.9 pound of AGROZYME—the amount required for the fattening period—was approximately $1.65 per head.

This new development in beef cattle nutrition carries with it the promise of shorter, more economical fattening periods and may prove to be of tremendous importance to cattle feeders and feed lot operators everywhere.

Merck is continuing its large-scale program of enzyme research designed to develop important break-throughs in the nutrition of animals. The discovery of the value of AGROZYME in cattle fattening rations is in part a result of this program. An earlier result was the application of AGROZYME to the improvement of the nutritive value of western barley. Future progress in enzyme research will be reported to the feed industry as soon as results become available.

Stocks of AGROZYME are available and may be ordered for experimental testing. For supplies or additional information, call your Merck representative or write to: Agricultural Products, Merck & Co., Inc., Chemical Division, Rahway, New Jersey.

*TRADEMARK OF MERCK & CO., INC. FOR ITS BRAND OF AN ENZYME SUPPLEMENT.

©MERCK & CO., INC.

MERCK & CO., INC.
Chemical Division
Rahway, New Jersey

Research, Feeding, Control Topics Heard at AHI Meeting

By PAUL L. DITTEMORE
Feedstuffs Staff

WASHINGTON—Ideas on how the feed and drug industries can help establish a sounder animal agriculture with a joint approach to health and nutrition problems and suggestions for accomplishing good working relationships among feed additive manufacturers, users and control officials were presented here at the Shoreham Hotel April 12-14 during the 19th annual meeting of the Animal Health Institute, a trade association for manufacturers, suppliers and distributors of animal health and nutrition products. (Also see story on page 1.)

Also on the convention program were topics covering animal disease control, animal taste sensation, and developments in livestock and poultry production.

Speakers included feed control and other government officials, agricultural researchers and industry representatives.

New Officers

Dr. Guy A. Railsback, veterinary products manager, Cutter Laboratories, Berkeley, Cal., was elected president of the Animal Health Institute for a one-year term. He succeeds True Davis, Jr., president of Anchor Serum Co., St. Joseph, Mo.

Other officers for the coming year are: First vice president, Richard D. Waters, president, Hess & Clark, Inc., Ashland, Ohio; second vice president, James E. McCabe, Merck & Co., Rahway, N.J., and treasurer, Thomas B. Huff, president, American Serum Co., Sioux City, Iowa.

Dr. Railsback, 44, a native of Langdon, Kansas, was graduated with honors from the department of veterinary medicine, Kansas State College, 1939. Dr. Railsback was in private practice until 1944 when he joined Cutter Laboratories. He is a member of the board and vice president in charge of sales and advertising for a Cutter affiliated company, the Corn King Co., Cedar Rapids, Iowa.

Award Presented

Dr. Hadleigh Marsh, 70, veterinary pathologist, Montana State College, and consultant to the U.S. Department of Agriculture, was presented the third annual Distinguished Service Award by the Animal Health Institute.

Dr. Marsh was selected by the AHI's special board of judges for his "outstanding achievements in animal disease research which have contributed to the productive capacity of the country's multi-billion dollar livestock and poultry industry."

The award includes an engraved plaque and a $1,000 honorarium.

The career of Dr. Marsh, a native of Ripon, Wis., spans a period of 50 years. He was graduated cum laude from the University of Chicago in 1909, and earned the degree of doctor of veterinary medicine from George Washington University in 1912.

He has authored nearly 100 scientific papers on his research on sheep and cattle diseases. Most of Dr. Marsh's career has been spent in veterinary research at Montana State. He also has served as consultant at various times to the USDA at home and abroad.

Talk Summaries

Summaries of talks presented during the meeting follow:

ANIMAL HEALTH AND THE FEED MANUFACTURER—Dr. Walter Glista, Wirthmore Feeds, Inc., Waltham, Mass., said that "efforts are being made within both the feed and drug industry to get back to a truly service basis." And, he indicated, a joint approach to the solution of health and nutrition problems will insure a continuing rapid rate of progress toward a sounder animal agriculture. He complimented the drug industry for the "real effort to sell good management and husbandry along with your product as an aid in prevention and control of disease."

Dr. Glista's comments were part of a talk on feed industry problems as they relate to the animal health product business.

He first mentioned that the feed industry is very susceptible to on-the-farm sales activity by drug firms, and he described the net result as "special mixtures, which create serious production problems."

"The list of 42 drugs used in feeds is imposing enough," said Dr. Glista, "but when you include the various possible combinations and levels of use, it is overwhelming. Consider also the sales forces of some 20 organizations each promoting its own product and each with a sales quota to fill."

"In the final analysis," said Dr. Glista, "the best salesman for a drug is effective results. To the nutritionist, this means first, supporting controlled laboratory data for the specific condition. Second, field experience is desirable.

"The nutritionist is far more anxious today to see good supporting evidence for any compound under consideration than ever before. Problems experienced in the past point this up very strikingly.

"The promotional campaign, whether by the feed or drug manufacturer, in many cases is one step ahead of the research program. We feel that this will be strongly tempered in the future for several reasons: (1) Failure due to premature marketing. (2) Changes in federal requirements for approval. (3) Lowered profit margins in production of meat, milk and eggs. From a strictly economic point of view, a long, hard look will be taken at each new additive.

"Claims and counter-claims are still with us, but they seem to be more subdued, more rational and are supported with better evidence."

Discussing the direction of feed industry research, Dr. Glista said many feed organizations in the recent past have felt it necessary to intensify their research on medicaments. But now, he said, more information is available from the drug industry and industry-sponsored university research. This, he said, should permit less emphasis on disease studies by the feed manufacturer, permitting him to turn back to his major field—nutrition. The net result will make possible greater progress in nutrition. Feed industry nutritionists, Dr. Glista

(Turn to ANIMAL HEALTH, page 102)

Southern States Co-op General Manager Dies

RICHMOND, VA.—O. E. Zacharias, Jr., 59, general manager, Southern States Cooperative, died April 7 at a Richmond hospital following a four-week illness.

O. E. Zacharias

Mr. Zacharias joined Southern States in 1935 as treasurer and comptroller, became director of the finance division in 1945 and held that post until his appointment as general manager in 1948.

He had been a director of United Cooperatives, Inc., Alliance, Ohio; Fertilizer Manufacturing Cooperative, Baltimore, Md.; Cooperative Fertilizer Service, Baltimore, Norfolk and Richmond, and the Southern States Underwriters, of which he was president at the time of his death. He served also as vice president and director, Texas City (Texas) Refining Co.; president and director, Cooperative Mills' Virginia division, and director, Cooperatve Mills' Ohio division.

He completed a term in January as vice president of the National Council of Farmer Cooperatives. At the time of his death, he was a member of the Council's board of directors.

Mr. Zacharias was a director of the Foundation of American Agriculture and the Agricultural Hall of Fame, organized last year to develop a national museum for the contributions of agriculture and agricultural leaders to the national economy.

He also had been an advanced accounting instructor at the University of Richmond's Evening School of Business Administration.

He is survived by his wife, two sons, a brother, a sister and five grandchildren.

Twin City Nutrition Seminar Scheduled

ST. PAUL—The April 21 meeting of the Twin City Nutrition Seminar, under the chairmanship of Don Swanson, will include the following addresses: "Bloat," by Dr. A. F. Sellers, University of Minnesota college of veterinary medicine; "Swine Nutrition," by Dr. R. J. Meade, department of animal husbandry, and "Beef Nutrition," by Dr. O. E. Kolari, department of animal husbandry. They will outline recent work at Minnesota.

The meeting will be held at Peters Hall on the St. Paul campus of the University of Minnesota, and will start at 7:30 p.m., according to Dr. J. Wesley Nelson, Cargill, Inc.

No Rebuilding Plans For Pillsbury Mill

CLINTON, IOWA—Feed division officials of the Pillsbury Co. have announced that the Colton, Cal., mill, recently destroyed by fire, will not be rebuilt.

C. S. Bell, general sales manager, and L. Wright, production manager of the feed division, said that because of expansion through new facilities in the San Joaquin Valley at Reedley and Modesto, Cal., Pillsbury will concentrate sales and manufacturing programs in those areas.

Ralph Van Hoven, 40, Dies of Heart Attack

ST. PAUL, MINN.—Ralph Van Hoven, prominent renderer, died of a heart attack April 13 at the age of 40.

Ralph Van Hoven

Long active in the feed industry as well as in affairs of the rendering industry, he was currently serving a term as president of the National Renderers Assn. and also was a member of the allied industry association advisory committee of the Nutrition Council of the American Feed Manufacturers Assn.

He was elected president of the renderers' group in November after serving six years as vice president, and had been a member of the allied industry committee for the past four years. Last summer he had represented the animal fats industry at the International Trade Fair in Japan.

Mr. Van Hoven was also a member of the board of directors of the Northwest Feed Manufacturers Assn.

He had been associated with the family firm, Van Hoven, Inc., St. Paul, since 1943 and had been president since 1953.

Surviving him are his wife, Jane; a daughter, Nancy; two brothers, Edward and Henry, St. Paul, and a sister, Mrs. John Apo, Hawaii.

The family requests that any memorials be made to the Jesuit Retreat House, 3900 DeMontriville Road, North St. Paul 9, Minn., where Mr. Van Hoven had just completed a weekend retreat the day he was stricken.

Cornell Reports Swine Feed Study

ITHACA, N.Y.—Results of experiments designed to compare the performance of growing pigs raised on pasture and fed a completely mixed ration with that of a similar group of pigs fed corn and supplement free choice have been reported by Dr. Wilson G. Pond, assistant professor of animal husbandry, Cornell University. Another purpose of the tests was to evaluate the usefulness of a commercial sweetener in improving palatability of the ration.

18 Pigs in Test

Eighteen pigs averaging 72 lb. each at the beginning were used in the tests. The pigs were divided into two groups of nine pigs each. One group received the complete mixed ration, which was divided into two fractions, one of which contained 0.05% Sucroflavor. The other lot was fed corn in one compartment and a choice of two supplements in other compartments of the self feeder. The two supplements were identical, except that one contained 0.05% Sucroflavor. The supplement was made unpalatable with 33% alfalfa meal.

Feeders were turned about twice weekly to eliminate effects of position preference on consumption of rations.

(Turn to CORNELL, page 97)

Grain on Farms Sets Record

WASHINGTON—Farm stocks of feed grains on April 1 were 8% higher than a year earlier in total tonnage and nearly one third above the 1948-57 average, the U.S. Department of Agriculture reports.

Compared with a year earlier, corn stocks were up 8%, sorghums were up 5%, oats were up 9% and barley was up 1%. (See Table 1.)

Soybean stocks were a record 125 million bushels April 1. This follows the heaviest disappearance for a January-March quarter in history. Disappearance from farms for the quarter was 75 million bushels, compared with 72 million bushels a year earlier and 37 million for the average. A much higher than usual percentage of farm stocks is under government loan this year, the report said. Soybean supplies held for seed, plus those under loans and purchase agreements, constitute about two thirds of the April 1 stocks.

TABLE 1. Grain Stocks on Farms on April 1

Crop	Average 1948-57		1958		1959	
	%*	1,000 bu.	%*	1,000 bu.	%*	1,000 bu.
Corn for grain	49.1	1,401,675	54.7	1,680,943	52.8	1,815,865
Wheat	20.4	227,285	18.6	176,737	19.4	282,989
Oats	37.4	484,458	41.6	540,627	41.3	587,576
Barley	29.2	88,924	34.3	149,981	32.2	151,372
Rye	22.6	5,211	29.1	7,927	29.6	9,600
Flaxseed	24.8	10,054	26.6	6,897	34.5	13,629
Soybeans	20.7	62,630	24.3	117,445	21.7	124,623
Sorghum grain	†13.2	†27,168	17.3	97,360	16.6	102,356

*Per cent of previous year's crop. †1957 only.

Letters to the Editor

Bookings

Chicago

To the Editor:

Your recent editorial in Feedstuffs under the heading "Bookings" is certainly convincing evidence of your interest in seeing our feed manufacturing industry maintain sensible and sound business practices in the handling of their distribution. The Sales Executive Committee of American Feed Manufacturers Assn. spent many hours of hard work putting together the recommendations that they felt could be followed by the vast majority of feed manufacturers to their ultimate benefit. As a member of this committee, it gave me much satisfaction to see almost unanimous endorsement of the program which has since been approved by the Board of Directors of AFMA.

Our industry today is beset with many problems. Among these might well be listed the many unsound forward booking practices now in use. Certainly no one can find valid argument for any form of forward sale that protects the purchaser against price advance, as well as against price decline.

Leadership through the AFMA membership can result in benefits that will improve the services we are expected to render. Considerable work is still needed to sell the need for sound booking practices to all feed manufacturers. We know we shall have your continued interest and support.

E. D. Griffin
Vice President
Allied Mills, Inc.

● ● ●

Sound Actions

Cayuga, N.Y.

To the Editor:

I was pleased to note the story in the April 4 issue of Feedstuffs discussing the American Feed Manufacturers Assn. Feed Merchandising Plan. Also your very favorable comment in your editorial column.

Not all of the AFMA directors went through the development of the Feed Merchandising Plan which started I think about 1929 and became effective a couple of years or so later. I worked hard on that plan here in the East. C. P. Clark of the Quaker Oats Co. was loaned by his company to stump the country on behalf of the plan and I attended a number of meetings with him here in the East.

Naturally, having been close to the original experience, I have been particularly anxious to see the association reaffirm its stand on the evils of long-time bookings and guarantees against decline.

It was encouraging to note that you featured this program both in your news columns and editorially. Incidentally, Feedstuffs has always, it seems to me, taken a broad and progressive view toward the problems of our industry and particularly has gone out of its way to support the programs developed by the AFMA board. Of course, in my opinion, the actions of the board have been extremely sound throughout the years and I have seen a good many years of their work. I have always felt that it was as fine a group of men that could be gotten together and that their actions were prompted by an unselfish interest in the common problems of the industry.

L. S. Riford
Chairman
The Beacon Milling Co.

MILLFEED • FEED GRAIN
FEED INGREDIENTS
What Do You Need?
—Jerry Parks
633 Board of Trade
KANSAS CITY, MISSOURI

Endorses Statement

St. Louis

To the Editor:

I wanted to compliment you on your fine editorial on long-term booking which appeared in the April 4 issue of Feedstuffs.

Over the years our company has tried to adhere to the principles which you have set out so clearly and persuasively. We have tried to adhere to them because we know they are sound.

We certainly want to endorse your statement that this is a sound program, and your appeal to industry leaders for full cooperation.

J. D. Sykes
Vice President
Ralston Purina Co.

● ● ●

Benefit to Industry

Chicago

To the Editor:

I am a member of the American Feed Manufacturers Assn. Sales Executives Council. I was very pleased to read the account of the merchandising plan on the front page of Feedstuffs. In placing it there you are helping emphasize a program that will be of great benefit to the entire feed industry. The degree that it is beneficial, however, will depend on the extent that we can get the entire industry to establish this program. Thank you very much for your splendid cooperation and help in getting this program sold to the feed industry.

D. B. Kinkaid
General Sales Manager
Hales & Hunter Co.

● ● ●

Plan a "Must"

Waltham, Mass.

To the Editor:

The writer read with considerable interest your recent article in Feedstuffs and also your editorial pertaining to the new proposed American Feed Manufacturers Assn. Feed Merchandising Plan.

Being a member of the AFMA Executive Committee of the Sales Executive Council, would like to take

(Turn to LETTERS, page 97)

To Discuss Pelleted Silage at Purdue

LAFAYETTE, IND. — Results of feeding dehydrated, pelleted whole corn and sorghum plants, corn silage and dehydrated, pelleted corn silage will be reported at Indiana Cattle Feeders Day April 24 at Purdue University.

This report will be one of five experiments being conducted by Purdue animal scientists which will be presented at the event.

Objectives of the experiment are to compare feeding value of dehydrated, pelleted corn silage with that of regular corn silage; the value of dehydrated, pelleted whole corn plant with corn silage, and with dehydrated, pelleted corn silage, and the value of dehydrated, pelleted whole sorghum plant with each of the others.

966-Million-Bushel Wheat Crop Forecast

WASHINGTON—A winter wheat crop of 966 million bushels on the basis of April 1 conditions was reported by the U.S. Department of Agriculture. This would be 18% less than the record crop of a year ago, but would be 19% above average.

The indicated yield at 21.4 bu. per seeded acre is second only to the record of 26.8 bu. in 1958, and it is well above the average of 16 bu.

C. G. Durbin Named to FDA Veterinary Post

WASHINGTON — Dr. Charles G. Durbin, who has been associate director of the veterinary medical branch of the Food and Drug Administration since 1953, has been appointed veterinary medical director of the FDA's Bureau of Medicine, it has been announced by John L. Harvey, deputy commissioner of food and drugs.

Dr. Durbin succeeds the late Dr. John H. Collins.

Dr. Durbin attended Temple University and the University of Pennsylvania school of veterinary medicine, receiving his V.M.D. degree in 1949. He did graduate work at the University of Maryland in virology and zoology.

From 1949 until 1952 Dr. Durbin was engaged in parasite research for the zoological division of the Bureau of Animal Research of the U.S. Department of Agriculture. He transferred to the Food and Drug Administration in 1952 to take charge of its therapeutic testing laboratory at Beltsville, Md.

Dr. Fred J. Kingma will succeed Dr. Durbin as associate veterinary medical director. Dr. Kingma joined the veterinary medical branch in 1957 as a veterinarian. He received his D.V.M. degree from Ohio State University in 1938 and served on its faculty from his graduation until 1955. When he left, he was professor and chairman of the department of veterinary physiology and pharmacology, and a member of the graduate school faculty.

From 1955 to 1957 he served in the research department of a drug manufacturing firm.

INSTALLS FORAGIZER

VERNALIS, CAL.—The San Joaquin Valley Hay Growers Assn. has installed a new Albers Foragizer for the manufacture of "hayfers."

Food & Drug Official Dies of Heart Attack

WASHINGTON—Dr. John H. Collins, veterinary medical director of the Food and Drug Administration, died of a heart attack recently at a hospital in Cheverly, Md.

Dr. John H. Collins

A graduate of Ohio State University where he received his veterinary degree in 1935, Dr. Collins served with the Department of Agriculture from 1935 to 1942, when he entered the FDA as an assistant veterinarian. He did veterinary research at the Food and Drug laboratories in Beltsville, Md., until he was assigned to the administrative headquarters in 1946. Since 1953, he had been the veterinary medical director for the FDA and chief of the veterinary medical branch of the Bureau of Medicine.

The author of many scientific papers, he also developed a standard method, which is still employed, for testing the efficacy of poultry coccidiostats.

Surviving are two children. His wife died in November, 1958.

Grain Theft Charged

WASHINGTON—Federal authorities have charged a Florence, Ill., grain elevator manager with illegally converting to his own use an estimated 650,000 bu. wheat, corn and soybeans valued at more than a million dollars.

The charge was filed against Richard Coultas, managing partner, Coultas Brothers Grain Co., Florence. The missing grain had been stored with the company under a government grain storage agreement.

Fruen's
Minneapolis, Minn.

ACE BRAND
ROLLED OATS
(Steam Processed)

if you want good, clean rolled oats at a competitive price

Send for samples and prices today
Mixed cars shipped at straight car prices
Our Teletype number is MP 477

TOWER BRAND ROLLED OATS (Steam processed)
ACE BRAND ROLLED OATS (Steam processed)
KING BRAND ROLLED OATS (Steam processed)
WHOLE OAT GROATS
STEEL CUT OAT GROATS
BOLTED OAT FLOUR
GLENWOOD FEEDING OAT MEAL
FALCON BRAND PULVERIZED WHITE OATS
STANDARD BRAND PULVERIZED WHITE OATS
DAIRY BRAND COARSE GROUND OATS
CRESCENT BRAND PULVERIZED OATS
CORN OATS PELLETS (Corn-Oats)
MIXERS' PULVERIZED OATS
MIXERS' COARSE GROUND WHITE OATS
MIXERS' PELLETED OATS
APEX BRAND CRIMPED WHITE OATS
OAT FEED
STEAM ROLLED WHOLE BARLEY
GROUND BARLEY
PEARLED BARLEY FLAKES (Max. 2½% fiber) (steamed processed)
GLENWOOD PEARLED BARLEY
STAR CRACKED PEARLED BARLEY
STEEL CUT WHEAT
ACME GROUND DOMESTIC FLAX SCREENINGS

Millers TO THE FEED TRADE

FRUEN MILLING COMPANY
MINNEAPOLIS 5, MINNESOTA

CAPITAL COMMENT

BY JOHN CIPPERLY

Wheat Legislation

A House agriculture sub-committee this week approved a wheat bill which carries the 90% of parity support requirement, but the bill lacks full committee support. It is understood that before the bill, introduced in the House by the sub-committee chairman, gets any clearance for House debate, the full House agriculture committee is prepared to hear testimony for or against the measure.

At USDA, the first reading of the report approved by the sub-committee provoked total rejection.

The fact that a House sub-committee has decided to approve such a bill creates the impression that even the less restrained House agriculture committee is unwilling to go along with the wheat league proposal of a domestic parity payment or the compensatory payment fascination introduced in the Senate. This means little less than there will be no major farm legislation this year—a statement subject to some modification.

There is a strong element in the Senate which believes there will be no basic changes in the farm bill concerning wheat price supports, but that Congress may decide to approve a complete seal-off of CCC stocks of surplus wheat for a year or more and let the new crop year test the Benson theory at the now available lowest level of support—75% of parity with an acreage allotment of 55 million.

In addition, there could be an attempt to curtail the penalty payment escape of farmers who overplant their basic acreage to halt such an expansion of wheat production.

It seems improbable that there will be wheat legislation action by Congress in the short period—30 calendar days—remaining in the current session. On the Senate side, there has been little, if any interest in farm legislation. It has been difficult to obtain even a quorum at business sessions of the committee. This makes for a field day for Democratic aspirants for the party's presidential nomination, since they are without inhibitions in their proposals for new farm programs.

It appears then, that prospects of farm legislation this congressional session are dim. Presidential hopefuls provide only a fanciful outlook, and their opinions can change before national conventions.

One immediate prospect of the outcome of this dominant Democratic Congress is that it will sit fast on the present farm law, move to seal off USDA stocks of wheat for another crop year and let the open market price determine the national election vote in the Wheat Belt in 1960.

Quentin J. Marsh

HUBBARD PRODUCTION—Quentin J. Marsh has been appointed feed division manager of Hubbard Milling Co., Mankato, Minn., it was announced by Ogden P. Confer, Hubbard president. Mr. Marsh, who has been with Hubbard since 1952, was assistant feed division chief prior to his new appointment, and earlier had served the company as advertising-promotion head, as sales manager in the Minnesota-Dakota area and in 1957-58 as plant manager of the Cedar Rapids, Iowa, operation. Mr. Marsh, an agriculture graduate of the University of Minnesota, was a county agent before joining Hubbard. Mr. Confer was feed division manager before being elected president of the firm.

CCC Sales Manager

Commodity Stabilization Service is currently trying to persuade Clyde Hendrix, formerly head of the Pillsbury Co. feed division, to take over the sales management post of Commodity Credit Corp., which had been held by the late Frank Daniels. At present, Mr. Hendrix is chief assistant to Leo Hoegh, director of the federal civil defense administration.

The pressure on Mr. Hendrix to accept this top sales spot in CCC reflects an effort on the part of CSS officials to bring into this sensitive spot topflight sales management ability and to emphasize a cohesive executive operation between CSS officials and the CCC sales manager's office. Appointment of Mr. Hendrix would not necessarily mean any major change in sales policy, but probably would reflect a close liaison between CSS and the CCC sales division.

The CCC sales office has been functioning effectively under the temporary assignment of the assistant sales manager, John H. Dean, career government official, and it is only because of his reluctance to take over this sensitive political post that he has not been given the opportunity.

However, the Hendrix approach of CSS officials does indicate an effort to get as their sales management head a person with wide commodity procurement activity in the general field of commerce. There is no doubt that Mr. Dean will remain as chief assistant to the man who takes over the CCC post.

A. L. Huggins Named Supersweet Buyer

MINNEAPOLIS — A. L. Huggins, formerly manager of the New Ulm, Minn., Supersweet feed plant of International Milling Co., has been appointed purchasing agent for the International feed division, a newly-created post.

He will remain in New Ulm until June 1, when he will move to the company's headquarters in Minneapolis.

Dean E. Ellett was named plant manager at New Ulm to succeed Mr. Huggins.

GTA Plans to Rebuild Billings, Mont., Mill

ST. PAUL—James Mayhall, feed division manager, Farmers Union Grain Terminal Assn., St. Paul, Minn., this week said tentative plans have been made to rebuild the GTA's feed mill and elevator at Billings, Mont., which were destroyed by fire and an explosion April 6.

He said the Billings market is now being supplied by GTA's plants at Glendive and Great Falls, Mont.

The loss was estimated at more than $400,000. Approximate cost of the feed mill, elevator and smaller buildings at Billings was $350,000 when constructed nine years ago. Also destroyed were 50,000 bu. grain valued at some $70,000.

It was reported from Billings that the explosion was believed to have been caused by "super-heated air" and grain dust. A fireman was injured while fighting the blaze.

Pius Geiger, feed mill superintendent, said an elevator man first discovered a small blaze at the edge of a wall on the second floor of the feed mill, and that firemen had that fire nearly extinguished when the explosion occurred.

A nearby warehouse was saved.

G. D. LaBudde Heads Milwaukee Exchange

MILWAUKEE—George D. LaBudde, president, LaBudde Feed & Grain Co., Milwaukee, was elected recently to his fourth term as president of the Milwaukee Grain Exchange. No other president of the exchange had served more than two terms.

George D. LaBudde

John G. Davis, president, John G. Davis, Inc., was reelected vice president of the exchange and James G. O'Brien was reelected secretary-treasurer. Herbert C. Kurth, Kurth Malting Co.; Herbert A. Pagel, The Riebs Co., and Thomas J. McElligott, LaBudde Feed & Grain, were named directors.

Named to the board of arbitration were Reinhold W. Hoth, Archer-Daniels-Midland Co., and Elmer W. Kossow, Mohr-Holstein Commission Co. Named to the board of appeals were A. L. Flanagan, Jos. Schlitz Brewing Co.; H. W. Kusserow, C. A. Krause Milling Co., and H. M. Stratton, Stratton Grain Co.

Oilseed Meal Futures Take Lower Trend

MEMPHIS—Oilseed meal futures generally were lower on the Memphis Board of Trade the past week.

An accumulation of cash oil meal in the nearby position proved more than the market could absorb without prices giving ground. And, in the face of this nearby congestion and slow cash business, speculative liquidation met only indifferent demand.

Trade selling was not pronounced, but was in evidence in modest quantities from time to time.

Spreading operations on the part of trade interests stimulated stronger futures activity at the end of the period.

Feed business was still reported good in most areas, with somewhat spotty conditions over-all.

Unrestricted soybean oil meal closed April 15 $1.45 lower to 20¢ ton higher than on April 8, Eastern Trunk Line soybean oil meal 50¢ to $1.25 lower, bulk solvent cottonseed oil meal unchanged to 50¢ lower, and sacked old process cottonseed oil meal unchanged. The only gainer was August unrestricted soybean oil meal.

Broiler Hatcheries Reduce Egg Set

SALISBURY, MD. — Apparently hatcheries across the nation fear a shortage of demand for their baby chicks. Last week, 14 of the 22 important states cut their egg set.

A total of 49,529,000 eggs was set during the week. This was 1% less than the previous week and only 4% over the number set a year ago. The sharpest decreases from the previous week occurred in Georgia, Alabama, Maine and South Carolina.

Fourteen states out of the 22 decreased the number of baby chicks started. Broiler growers across the nation started 36,298,000 chicks last week. This was 1% less than the previous week but 9% above the corresponding week a year ago. Largest decreases from the previous week occurred in Arkansas, Pennsylvania, Maryland and Virginia.

Probably some of this discouragement came from a lower price last week. In Delmarva, the average price paid on the farm last week was 16.98¢, compared to 17.09¢ the week before.

Delmarva growers sent 4,292,000 broilers to market during the week ending April 11—17% more than the previous week and 27% more than the corresponding week of 1958.

Boston Exchange Seeks Freight Rate Reduction

BOSTON, MASS.—The board of directors of the Boston Grain & Flour Exchange has voted unanimously to ask the various railroads serving New England for a freight rate reduction of at least 7¢ cwt. on all grain and grain products moving from the Midwest into the New England states.

According to John P. Brooks, president of the exchange, the board of directors feels such a reduction is necessary if grain and grain products are to move in normal channels in view of expected competition from the St. Lawrence Seaway. The board has also stated it is "imperative that any reduction in freight rates maintain the usual transit privileges."

Dr. C. W. Pope Joins Purina Research Staff

ST. LOUIS—Dr. Charles W. Pope, formerly on the poultry husbandry staff at Michigan State University, has been named assistant manager of general poultry research for Ralston Purina Co., Dr. R. M. Bethke, research vice president, has announced.

Dr. Pope received his B.S. and M.S. degrees from Louisiana State University and took his doctorate in poultry nutrition at Michigan State. While taking graduate work at Michigan State, he taught poultry nutrition.

He will headquarter at Purina's general offices in St. Louis. His duties will be concerned with nutrition research for chicken layers and breeders, Dr. Bethke said.

W. Clark Lingren, Former Grain Man, Dies

MINNEAPOLIS — W. Clark Lingren, 76, retired grain and feed man, died April 15 following an illness of several weeks.

Mr. Lingren was manager of the Farmers Elevator Co. in Forest City, Iowa, for 25 years. He left this position in 1944 and later worked for the H. T. Bibb Co., feed and grain firm in Ft. Worth, and the Farmers Grain Dealers Assn., Des Moines. He retired in 1953 and has since been living in Minneapolis.

Survivors include two sons, Wilfred E. Lingren, executive vice president of The Miller Publishing Co., and Dr. Vernon C. Lingren, Pittsburgh; three sisters and a brother, all of Forest City.

This "PROTECTION TEAM"

100 Doses
MF
Broiler Type
CocciVac.
A coccidiosis vaccine for use in drinking water or small amount of moist feed. Use with feed containing a recommended coccidiostat. See enclosed direction sheet. Broiler COCCIVAC protects chicks against cecal (E. tenella) and intestinal (E. hagani, E. acervulina) coccidiosis. Use at 3-4 days of age.
Dorn and Mitchell
Laboratories, Inc.
SPRING ALABAMA
Trithiadol
A COCCIDIOSTAT
FOR USE IN POULTRY FEEDS ONLY
Sterwin Chemicals

—Assures Lasting Immunity Against Coccidiosis —Saves You up to $7.50 Per 1000 Birds

LASTING IMMUNITY TO COCCIDIOSIS
requires exposure and control!

The "PROTECTION TEAM" of CocciVac and a recommended coccidiostat, such as Trithiadol®, assures *both!*

CocciVac*, a coccidiosis vaccine, provides a measured exposure through vaccination . . . Trithiadol, the superior, time-tested coccidiostat by Sterwin, protects while immunity is developing.

Yet this solid, active immunity saves you up to $7.50 per 1000 birds over the use of a coccidiostat alone.

WITH "PROTECTION TEAM" IMMUNITY . . .

BROILER GROWERS avoid costly mortality and weight loss caused by coccidiosis. REPLACEMENT GROWERS get protection against coccidiosis in later growth period and laying cycle.

*CocciVac is the registered trademark of Dorn and Mitchell Laboratories, Inc.

Because the best protection is the most economical,
GET THE FULL STORY ON THE "PROTECTION TEAM"
See your Sterwin Representative/or send coupon today!

STERWIN CHEMICALS INC. FS-4187
Subsidiary of Sterling Drug Inc.
1450 Broadway, New York 18, N. Y.

Please send me complete data on PROTECTION TEAM IMMUNITY against coccidiosis.

NAME_____

COMPANY_____

ADDRESS_____

CITY_____ STATE_____

MFR. ☐ DEALER ☐

PROGRESS IN FEED PRODUCTION

After he has fulfilled the foremost requirements of quality and service, the feed manufacturer should be greatly concerned with production cost per ton. Marked progress has been made in reducing labor requirements per ton, and the potential for further improvement is great in most plants.

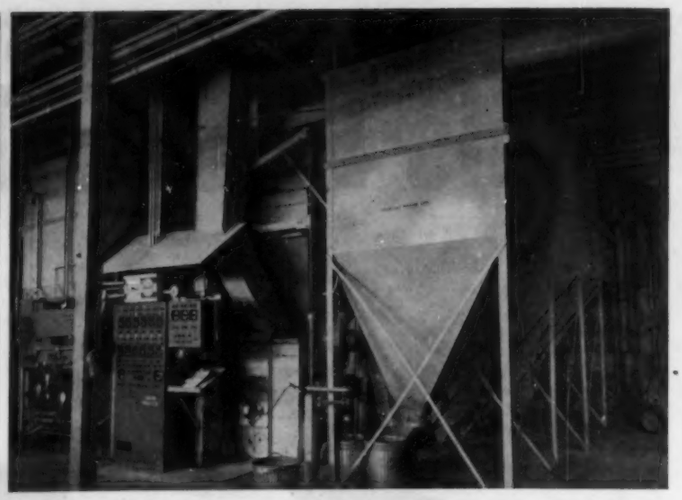
By Lonnie R. Wright
The Pillsbury Co.

EDITOR'S NOTE: The accompanying article is the last in a series being published in Feedstuffs as part of the observance of the feed industry's "Golden Year." The 12 months following the American Feed Manufacturers Assn.'s 50th convention in May, 1958, were designated as the Golden Year, focusing attention on industry and feeding progress. In this connection, Feedstuffs has been publishing a series of articles on nutritional advances and feed industry operations. This article, by Lonnie R. Wright, deals with progress made and to be made in the production of feed. The pictures, illustrating various developments in manufacturing and handling, were taken in Pillsbury feed plants.

A Golden Year Feature

Improvements in feed production methods cannot be evenly spread over the last 50 years. Improvements during the last 10 years would probably well exceed those of the first 40 years of the past half century.

We do not have to go back even 50 years to find the time that ingredients and grains were all transported and received at feed plants in sacks. The sacks were moved throughout the plant on hand trucks and were then stacked by hand, in most instances all the way to the ceiling. Then it was a matter of removing the sacks and reloading them on hand trucks for movement to the mixer, where the slow process of opening them and dumping them into the mixer was completed. This cycle started over again after the dumped ingredients were mixed and then placed into a sack and sewn by hand. Only within the last 15 years have the continual increases in labor cost made it necessary to find ways to handle materials in a more economical manner. With 30¢ per hour labor a manufacturer could afford 6 man-hours as compared to a $1.80 per hour rate of today, which would be 1 man-hour. Therefore, it can be seen that the manufacturer of yesterday could be content with using far more man-hours to manufacture a ton of feed than he could with those same man-hours today. Fringe benefits of today also greatly affect this comparison.



This 2-ton mixing unit at one of Pillsbury's plants is on a one-floor plan basis, utilizing an existing flat type building. The mixer is surrounded by 11 bulk bins that are supplied by a fork lift bucket. The large storage for bulk ingredients is flat storage utilizing space that was formerly a large dock area.

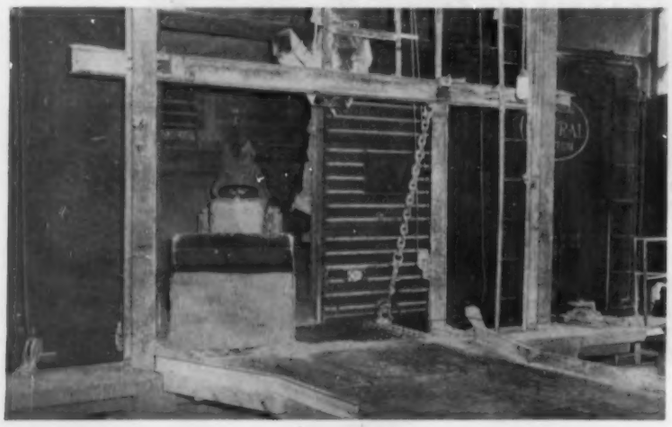
BULK INGREDIENTS—A modern production operation in a plant with a minimum annual capacity of 18,000 tons, producing a full line of animal and poultry feeds, cannot be content with less than 90% bulk ingredients. Usage of the remaining 10% will be in quantities so small that bulk handling becomes impractical. In a mill specializing in one type of feed, such as poultry, with an annual capacity in excess of 50,000 tons, management should not be content with anything less than 98% bulk ingredients.

MIXING—The mixing of animal and poultry feed over the years has been done in many varied ways. It was not at all uncommon at one time for some manufacturers to actually mix feed on the floor with a scoop. With the increase in number of ingredients, higher quality standards, and increased dollar cost of labor, changes in method of mixing were mandatory. The continuous line method, the vertical, and the horizontal batch mixer came into being. On the horizontal mixer with ample bulk bins above, feeding into a scale controlled by an automatic panelboard and with surge beneath, one man can, with ease, deliver up to 40 tons of mixed feed per hour. In past years it was believed that a 1-ton mixer was the proper size. Over a period of time, the industry moved into 2-ton, then to 3-ton mixers; today there are some mixers in the 5-ton class.

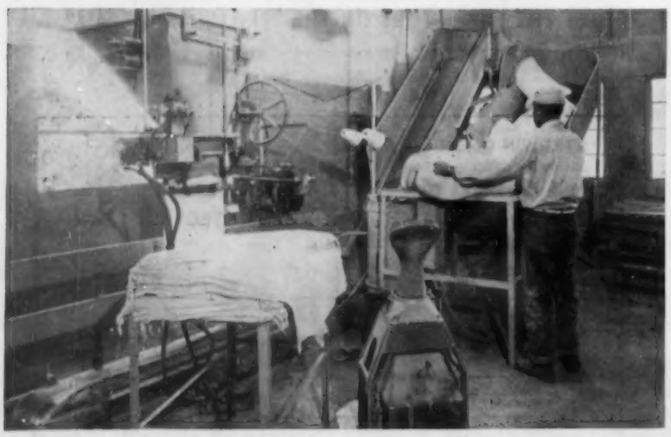
PACKING — Slop packing direct from a spout and then lifting a bag onto a platform scale where finished weights were obtained has given way to the automatic scale. Here the desired weight is obtained within the scale and the feed is dropped into the bag. During the period of slop packing

Lonnie R. Wright

AUTHOR—Lonnie R. Wright is plant operations manager of the Pillsbury Co.'s feed division. He is in charge of all feed plant production, traffic and distribution, and quality control. A native of Tennessee, Mr. Wright began his career in the milling industry as a millwright helper with Ballard & Ballard Co. in Nashville. The following year he was made production foreman, and in 1940 he became flour mill superintendent at the Ballard plant in Mobile, Ala. In 1944 he was named manager of the Ballard feed plant in Savannah, Ga., and in 1946 he was transferred to Louisville, where he held a number of executive production posts. After Pillsbury acquired Ballard, Mr. Wright was appointed plant manager of the Louisville plant. In 1957 he was named plant operations manager for the feed division, which has its headquarters in Clinton, Iowa.



Payloader type unloading is used by Pillsbury on inbound bulk ingredients, either meal or grains.



This operation is a one-man packing set-up, where the one man packs, sews and palletizes 100-lb. textile bags. This one man can average 5 tons per hour alone. Note the reverse position of the sewing head due to the warehouse space available.

Take-it-or-leave-it pallets are being loaded from a horizontal conveyer belt. The conveyor is supplied from two packing stations.

ing it was common practice to use one man to fill the bag, a second man to weigh, and a third man to sew. With the development of the automatic scale most feed manufacturers felt it necessary to use one man to pack and one to sew. With today's packers in combination with bag clamps and the sewing machine attachments, the plant that is using more than one man either on paper or textile bags for packing should take a good look at its operation. One man can absolutely pack and sew 8 to 9 textile bags or 12 50-lb. paper bags per minute.

WAREHOUSING — Hand trucks should indeed be a rarity in an up-to-date feed production operation. Where fork lifts can be operated from a standpoint of space and floor loads, they should be used. Hand trucks should be completely removed from the premises; otherwise they will continue to be used. There is no place for both a fork lift and a hand truck operation in the same warehouse. The take-it-or-leave-it pallets provide for proper warehouse stacking as well as allowing the fork lift operator to accumulate the load and place it in a railroad car without leaving the fork lift.

Many production people have learned from experience that there is an extensive educational job to be done to properly inform both the sales force and the customer of the reason for using the take-it-or-leave-it type carloading rather than the conventional hand loading of cars. Rather than stacking bags directly from the sewing machine onto the hand truck, today they are usually conveyed by belt into a warehouse where they are either pulled directly from the belt or stacked onto pallets held with a jig for neatness and ease of stacking. In the case of three or more products handled on the same belt, a turntable is used for sorting. Here again the jigs have the advantage of the stacker's being able to more or less throw the bag into position on the pallet.

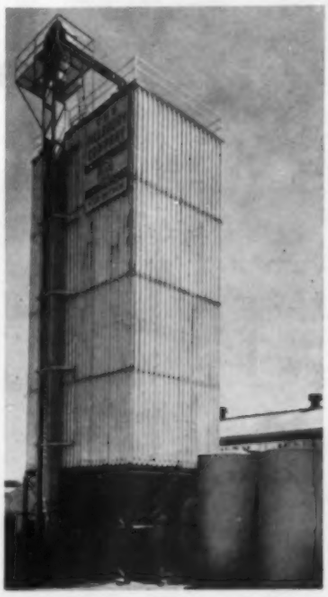
BULK LOADOUTS — Today we cannot talk about packing and loading without also recognizing the growing trend to bulk feeds. These bulk feeds are handled in varied ways. The tote box system is a reasonable method for plants that do not have a high percentage of bulk demand. Plants that move considerable bulk tonnage must find a way to accumulate the feeds prior to loading and immediately on arrival of the truck be able to quickly drop the load into the truck. Not only do we feel the need for fast loading and movement of our own trucks due to high trucking costs, but this fast service is definitely in demand on the part of the customer who picks up his own feed.

IMPROVEMENTS ARE NECESSARY—The improvements of today came about for three reasons: (1) Quality, (2) service, and (3) cost. No feed manufacturer can survive today without quality and service. After he has fulfilled these two foremost items,

Fast bulk loading of poultry feeds can be accomplished from this southern plant by 16 bins outside over a 60-ft. truck scale and 12 bins inside using an in-plant scale. Thus, two bulk loadings can be accomplished at one time.

he should then be greatly concerned with the production cost per ton. With the rate per hour for manpower so much greater than in years past, and with the current trend to higher wages and benefits, coupled with the established fact that one cannot expect as much physical effort from a man today as in previous years, the feed manufacturer must regard the area of man-hours per ton

(Turn to page 14)



Steel tanks provide storage for six bulk ingredients for a small southern mill, resulting in savings on both procurement and production costs.

This picture shows a turntable in a Pillsbury mill which receives bags from several production stations. The surroundings jigs provide for easier and straighter stacking.

SUNSET FEED & GRAIN CO., INC.

PHONE CLEV. 2938 — 805 Dun Building, Buffalo 2, N.Y. — TWX BU 71

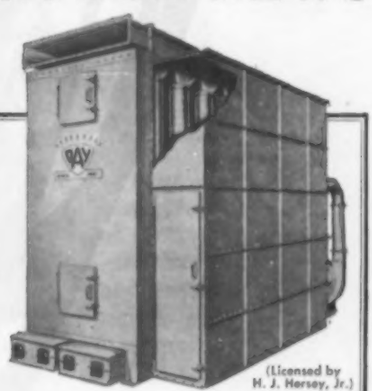
FEED JOBBERS
AND
DISTRIBUTORS OF

KELLOGG HOMINY FEED — HUBINGER GLUTEN FEED
DYNAFOS DICALCIUM PHOSPHATE AND MULTIFOS
SODIUM BENTONITE
PACIFIC MOLASSES — PILOT OYSTER SHELLS
DU PONT'S "TWO-SIXTY-TWO" FEED COMPOUND
STONEMO GRANITE GRIT — CALF MANNA
NOPCO FEED SUPPLEMENTS
WHEAT GERM — WHEAT GERM OIL
AGRI-TECH ALFALFA PRODUCTS

INQUIRIES APPRECIATED

DAY

DUST CONTROL NEWS



Largest selling filter of its type in the world!

DAY "AC" Reverse Jet Dust Filter

Cutaway view of DAY "AC"—available housed or unhoused—for pressure or suction.

(Licensed by H. J. Hersey, Jr.)

Better Dust Control Systems Cost Less When They Include a DAY "AC" Reverse Jet Filter!

Less equipment needed — Filtering rates for a DAY "AC" are 10 to 20 cubic feet of air per square foot of filter media. These are about five times greater than old style filters. This means you get maximum filtration from a minimum filter investment. Because virtually 100% of the DAY "AC" is operating at all times, no money is wasted on intermittent or standby units. One DAY "AC" will filter and keep separated, dusts from up to 10 different sources!

Less maintenance — You know all equipment requires *normal* inspection and care. But you'll find many DAY filters have been on the job for 5, 6, 7 or even 8 years that have had no repairs whatsoever. In short, *the Day "AC" is built* to last! They have an "appetite" for work and a reputation for dependability and long life.

Less space needed — Because of smaller diameter felt filter tubes the DAY "AC" gives you a greater air handling capacity in less space. DAY "AC" filters occupy up to 50% less space — an important consideration for plants of any size!

99.99+% filtering efficiency — The real "pay off" on DAY "AC" filters is their ability to clean dust laden air with near perfect efficiency! Even "tough" materials such as carbon black or atomic energy materials are filtered with optimum effectiveness.

For additional information about the DAY "AC" reverse jet dust filter write toDAY for Bulletin F-75. It also contains pages of useful air engineering data.

The **DAY** *Company*

SOLD in UNITED STATES by The DAY SALES Company, 819 Third Avenue N.E., Minneapolis 13, Minnesota

MADE and SOLD in CANADA by The DAY Company of Canada Limited, Rexdale (Toronto), Ontario, Canada; Ft. William, Ontario, Canada

Representatives in Principal Cities

EQUIPMENT ONLY OR A COMPLETE SYSTEM

If the antibiotic you're now

using is suffering from old age...

GET YOUR LAYER FEEDS BACK IN ACTION WITH BACIFERM®!

TIME TO RETIRE YOUR OLD ANTIBIOTIC? You've probably asked yourself this question now that new facts about the bacteriostatic (bacteria-slowing) "broad-spectrum" antibiotics are beginning to unfold. These aging tetracyclines have apparently built up resistant strains of bacteria, and find it difficult to do the job they once did.[1] These new findings indicate you may not be getting full value from the money you spend on such antibiotics.[2,3] There is increasing realization among nutritionists of the value of the bactericidal (bacteria-killing) antibiotic Baciferm.

WHAT A DIFFERENCE BACIFERM MAKES IN FEEDS! Flocks have new "get up and go." Appetites bound back. Egg baskets fill up faster. Laying periods stretch out. Hatchability increases and mortality falls off. Baciferm contains the exclusive* antibiotic zinc bacitracin. Baciferm never lets down its guard. Baciferm's *selective* action kills dangerous bacteria fast, lets beneficial bacteria go right on producing vitamins and other valuable growth factors. With Baciferm, there is no upset of normal bacterial balance. In stress periods, Baciferm controls deadly secondary invaders. Baciferm never lets your feed down.

BE SURE WITH BACIFERM! Put doubts about antibiotics to rest with Baciferm. At high levels or low levels Baciferm *always gives full protection.* Baciferm packs into feeds plenty of extra B-vitamins, high protein, vitamin K and unidentified growth factors. Zinc bacitracin has the antibiotic stability manufacturers require. Cost? Baciferm can be added to each ton of your layer feed at $2 to $4 less than the tetracyclines.

1. Whitehair, C. K.: Medicated Swine Feeds. North Am. Vet. (Am. J. of Vet. Sci.) 39 (No. 2) (Feb. 1958): 32.
2. McGinnis, J. et al.: Use-history of Antibiotics as Related to Their Efficacy in Promoting Growth of Turkeys. Poultry Science, In press.
3. Bird, H. R.: Coming Events in Poultry Nutrition. Hatchery & Feed, July, 1958.

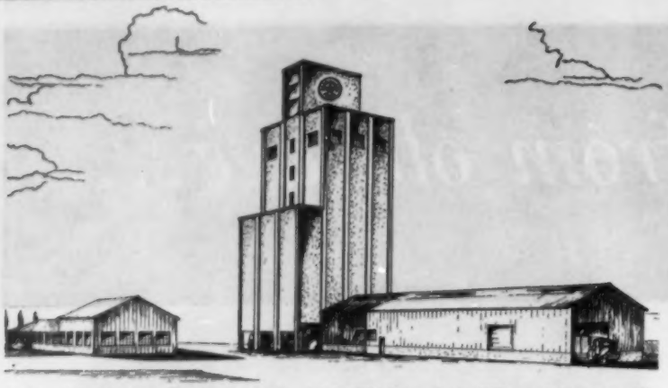
**Made exclusively by CSC under Patent No. 2,809,892 issued October 15, 1957.*

the buy is BACIFERM®!

(ZINC BACITRACIN ANTIBIOTIC SUPPLEMENTS)

ANIMAL NUTRITION DEPARTMENT • COMMERCIAL SOLVENTS CORPORATION, 260 MADISON AVE., NEW YORK 16
IN MEXICO: COMSOLMEX, S.A., MEXICO 7, D.F. • CANADIAN SALES REPRESENTATIVE: NORMAN STARK

CSC



A drawing of the new feed plant which Pillsbury is building at Jasper, Ala.

as one of the most fertile in which to seek improvement. The potential for reducing man-hours per ton is almost unlimited in most mills. Changes in mill flow, machinery and methods, when properly analyzed and applied, can offer some very encouraging improvements in man-hours per ton. The production man of today should constantly strive to seek capital and/or expense money from his management to improve man-hours per ton. Table 1 will indicate the actual progress that has occurred over the last five years in six feed plants.

TABLE 1. Progress in Man-Hours Per Ton Over Last Five Years

Plant	1955	1956	1957	1958	1959
A	2.75	2.48	2.09	2.04	1.66
B	2.69	2.45	2.03	2.07	1.27
C	2.18	1.92	1.63	1.47	1.22
D	2.87	2.75	2.20	2.24	1.78
E	...	...	.50	.38	.33
F	1.60	1.49	1.52	1.28	1.08

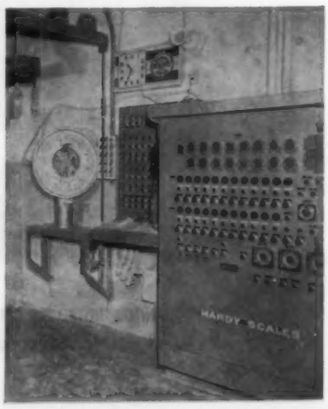
Naturally man-hours per ton should be evaluated in the light of the number and type of products being produced. It is possible to operate a large volume specialized feed plant on as low as .3 man-hour per ton. In a plant where a full line of products is produced, man-hours may be 1½ per ton. A good goal for the production man to aim for in the next several years is to have full line operating plants on no more than .8 man-hour per ton and specialized plants on .25 man-hour per ton. These standards should not be impossible for many feed plants to achieve.

The area of labor costs is just one of many in which the production man can make improvements; some of the others are:

Shrink Control—This is an area that has rarely received the attention that it deserves, and it is rare to find a plant that has less than 60 to 75¢ per ton shrink. In past years we referred to shrink in terms of per cent of shrink. This has become completely out-dated because the mis-use of ingredients may not affect per cent of shrink while resulting in a considerable loss in dollar shrink caused by using too much of a high priced ingredient and too little of a low priced ingredient. Also, the present-day use of high priced additives tends to make the dollar shrink problem more important. Dust collection, sweeping, cyclones, correct weighing of inbound and outbound products, proper weights of ingredients in each batch, are all areas where influence can be had on this dollar shrink.

Product changes—Changes in products in present day production have done much to change the method of production. Years ago only dry ingredients were mixed together, with the exception of molasses added to dairy and horse feeds. Present day formulas call for the addition of various liquids, including molasses, fish solubles, fats and others. The trend to more pelleting and crumblized feeds has also complicated and increased the cost of the production process. The addition of some cracked grains to mash feeds, as well as some mash feeds having a percentage of crumble or pelleted combinations, has caused additional production problems and cost within plants, too. The more recent trend to bulk sale of feeds has necessitated provisions for handling these bulk feeds from the plant to the dealer or to the dealer's customer. The trend to bulk has been beneficial to the production operation because there is less effort involved in the handling of bulk than sacked products.

TRENDS IN DESIGN OF FEED-MILLS—It is our belief that future mill designs will be based on the need the plant is to fulfill. For example, the feed mill that Pillsbury is presently building in Jasper, Ala., is typical of the large tonnage specialized plant. This plant will produce poultry feeds exclusively in large volume. Bulk ingredients will be received up to 99% of the total tons produced. They will be unloaded from trucks by truck lift, then into a pit from where they are elevated to the top of the mill, weighed, scalped, and then into a turn-head which will deposit the in-



This automatic panel board, illustrating the increased automation in feed manufacturing, operates two 2-ton horizontal mixers. The 2-ton scale above the mixers is supplied by 22 overhead bins.

YOU'RE LOSING MONEY DELIVERING FEED BY THE SACK!

A U. S. Government Study* reveals almost 40% of labor in handling bag feeds is wasted . . . in idle and delay time, and in time lost by workers who return to the conveyor empty-handed after loading bags into trucks, rail cars, or storage.

*U. S. Dept. of Agriculture Marketing Research Report No. 205

BOOST YOUR PROFITS... BAUGHMAN SF-8 BULK FEED BODY

• BIGGER PAYLOADS
• BIGGER LABOR SAVINGS

A High-Speed Screw-Feed Body designed for one-man operation and Baughman-Engineered for easy, inexpensive maintenance. Makes more deliveries per day, with fewer man-hours spent in feed handling. You save the cost of bagging feed, can sell at a lower price, and still make more money.

THERE'S A BAUGHMAN BULK FEED BODY TO FIT YOUR NEEDS

MODEL PF-6 . . . Pneumatic discharge . . . delivers bulk feed . . . "by air". Sealed air discharge delivery up to 600 lbs. per minute. Air stream delivers to high bins out of reach of conventional discharge units. PTO or auxiliary engine drive . . . truck or trailer mounted . . . in lengths from 10' to 40'. Bulletin A-426.

DU-ALL . . . Utility Bulk Feed Body. Does double duty: 1. Automatic self-unloading of bulk feed; hydraulically-operated discharge auger unloads 250-500 lbs. per minute. 2. General hauling. Close discharge ports and Du-All hauls livestock, produce, farm equipment, building supplies, etc. Bulletin A-420.

Baughman SF-8 features include:

COMPLETELY AUTOMATIC DISCHARGE — through horizontal and vertical augers.

MULTI-COMPARTMENTS — permit carrying of mixed loads, and premeasuring of separate loads before delivering.

SELF-CLEANING — through body augers which clear the body of old feed . . . leave nothing to contaminate new loads.

ONE MAN OPERATION — of entire operation, including speed of discharge and positioning of discharge auger through full 280° sweep. Convenient controls are on side of body.

CHOICE OF DRIVES . . . LENGTHS — The SF-8 is available with Power-Take-Off or Auxiliary Engine Drive . . . in lengths from 10' to 40' . . . either truck or trailer mounted. Also available in aluminum for increased payloads.

Ask for Bulletin A-427

BAUGHMAN MANUFACTURING CO.
196 Shipman Road • Jerseyville, Illinois
Please send me additional information on
☐ SF-8, Bulletin A-427
☐ PF-6, Bulletin A-426
☐ Du-All, Bulletin A-420
WRITE for bulletins by numbers listed under each model.
NAME.....
ADDRESS.....
CITY..... ZONE..... STATE.....

Better Service thrrugh Better Engineering
Service and Parts from 200 Service Branches

BAUGHMAN MANUFACTURING CO.
JERSEYVILLE, ILLINOIS

enzymes figure in your future...

Here's how TAKAMINE LABORATORY can put over 60 years of know-how and 35 years of feed enzyme experience to work for you NOW!

Today's stepped up interest in feed enzymes calls for a more intensive program of enzyme testing and evaluation in your feed formulas. TAKAMINE* LABORATORY, the oldest basic producer of purified enzymes of microbiological origin in the country, can help you.

TAKAMINE enzymes have been used experimentally in animal and poultry feeds since 1924. In 1957, a major breakthrough was made (10,000,000 broilers or the equivalent of 1,000,000 turkeys, for instance, already have documented TAKAMINE enzyme results with western barley grain).

TAKAMINE LABORATORY is a leading supplier of these **natural** catalysts to the feed, food, pharmaceutical and industrial fields, where rigorous quality control, uniformity of product, stability and reproducibility of results are required.

Take advantage of the continuing intensive and extensive TAKAMINE research program by authoritative and experienced specialists in this complex industry. **Because of the highly specialized nature of enzyme work, we believe this is significant to you.**

If you are interested in feed enzyme materials for evaluation —or if our Technical Service Department can be helpful—call, wire or write us for details.

TAKAMINE®

*(Pronounce it Tack-a-ME-nee)

Takamine Laboratory

DIVISION OF MILES LABORATORIES, INC. • CLIFTON, N. J.

Phone PRescott 9-4776 or TWX-78-PAS

Jacobson QUALITY
FEED MILL EQUIPMENT

JACOBSON HAMMERMILLS
AJAGS Quick Screen Change
UNIVERSAL Quick Screen Change
AJAGS-O-MATIC Remote Screen Change

JACOBSON MACHINE WORKS, INC.
Nearly a Half Century of Service to the Feed Industry
1090 Tenth Avenue S. E. Dept. M Minneapolis 14, Minn.

gredients or grains into any one of 31 bins. No conveyors will be used on the bin floor for reasons of contamination, power and maintenance. Six grain bins will be spouted directly to the hammermills in the basement. Here again no conveyors will be used for reasons of contamination, power and maintenance.

There are 26 bins over a 6-ton scale. There will be a secondary scale for micro-ingredients providing for 14 such ingredients feeding into a small second teflon-lined scale. The automatic panel board will call for the various ingredients and cycle them through the scale, mixer and surge. One 6-ton horizontal mixer will be installed to mix all ingredients. A high-speed blender will immediately follow the surge. Feeds will then be moved by bucket elevator to the bin floor, where they will be scalped and then deposited into any one of 20 loadout bins or into bins over the packer or pellet mills.

Only a small percentage of the tonnage will be sacked. One man will do

One-man packing station, packing 12 to 14 50-lb. bags per minute.

the packing, sewing and palletizing. Pellets will be manufactured through two 100 h.p. pelleting units. An adjoining warehouse of 48′ x 120′ will include a shipping office, restrooms, boiler and warehouse space for sacked feed. Loadout bins located over a 60′ truck scale will be operated by air pistons for fast and accurate loading. Liquid tanks will be of the vertical type and approximately 100′ removed from the mill. A building 40′ x 125′ will be parallel to the mill and warehouse and removed by approximately 80′. This building will provide for the office, laboratory, locker rooms, maintenance shops and shop for truck repairs.

FUTURE FEED MILL IMPROVEMENTS—We believe that improvements in feed mills of the future should include a program for more accurate weighing scales in and out and within-plant weighing to decrease shrinkage. Improved dust collection also would ease the shrinkage problems. It is further believed that automatic control on pelleting units and hammermills will reduce the time required by an operator.

Another important factor in improvements is that pelleting units of greater capacity should be seriously considered.

OPENS FEED STORE

COLUSA, CAL.—Walter D. Griffith, Jr., has opened a new retail store here known as Griff's Feed & Seed Store.

Should your formula include
TSB*

We should like to suggest another ingredient, TSB. A pinch of TSB may easily turn out to be the factor that makes your feed more profitable.

What is TSB?

It stands for Technical Service Bureau . . . *Nopco's* Technical Service Bureau which supervises the compatibility and method of manufacturing

NOPCO-PAK®

What is NOPCO-PAK?

Nopco-Pak is a vitamin supplement blended for you with Nopco know-how.

It is formulated to meet *your* specifications.

Nopco Paks contain Nopco's unique Micratized® Vitamins A and D, which make possible delivery of full vitamin potency without costly overages.

They are packed in batch-sized bags to give you the utmost in ease of handling and space conservation in your warehouse.

Send for the New Nopco Nutrition Chart

Nopco's Technical Service Bureau staffed with trained nutritionists and chemists qualified to serve you. It has already developed a vast number of compatible formulas and is currently originating new ones and revising old ones at a rate of more than 1000 a year. This expert nutritional assistance is yours at no cost when you buy Nopco-Paks.

NOPCO

NOPCO CHEMICAL COMPANY
General Offices: 60 Park Place, Newark N.J.
Plants: Harrison, N.J. • Peoria, Ill. • Richmond, Calif.
Basic producers of Micratized Vitamins A and D, niacin, calcium pantothenate, choline chloride, and other products

K-M
NOW BETTER THAN EVER!
NO OTHER DRINKING WATER PRODUCT DOES SO MUCH FOR BABY CHICKS!

★ REDUCES DEATH RATE OF CECAL COCCIDIOSIS from excessive bleeding associated with Vitamin K deficiency.
★ PREVENTS AND TREATS HEMORRHAGIC DISEASE due to Vitamin K deficiency by providing normal clotting of blood.
★ IMPROVES FEED CONVERSION
★ PROMOTES FASTER GROWTH through increased water and feed consumption.
★ KILLS GERMS of Paratyphoid, Typhoid, Pullorum and Cholera in contaminated water.
★ SANITIZES-DISINFECTS Aids in keeping drinking fountains Slime-free.

RECOMMEND AND SELL HILLTOP K-M
WRITE FOR CATALOG!

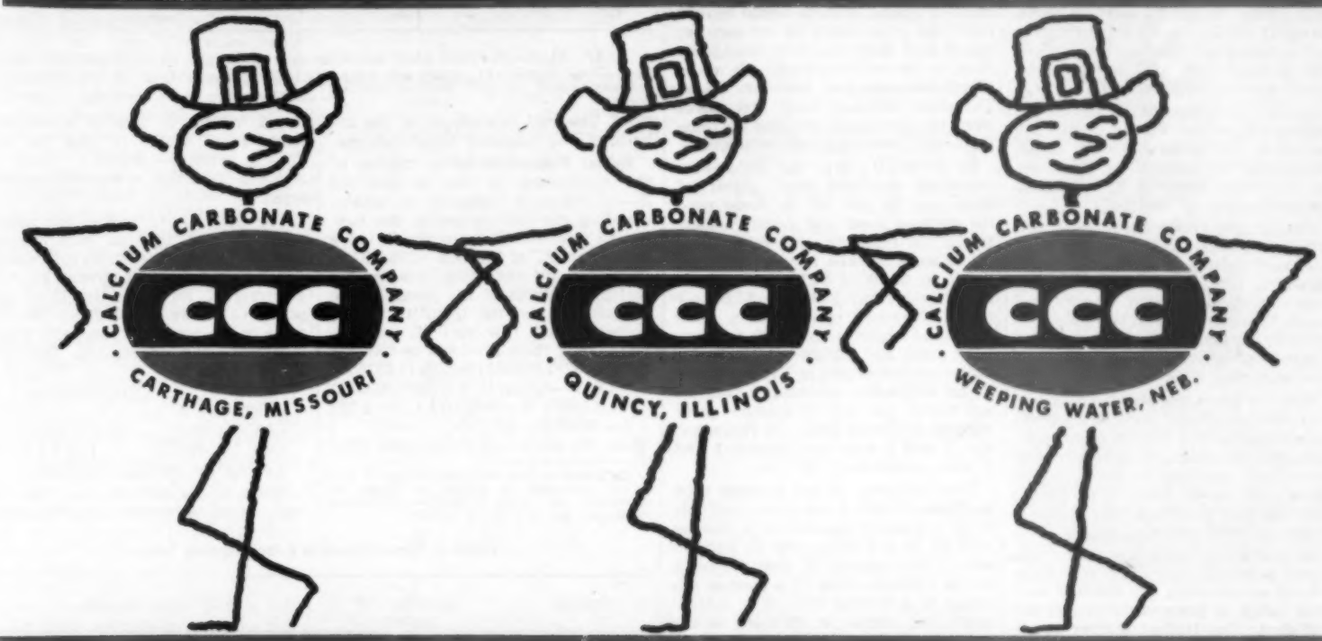
HILLTOP LABORATORIES
Aids for Poultry
Minneapolis 1, Minnesota

The THREE Puritans

THE THREE PURITANS symbolize the three CCC quarries—in Quincy, Illinois, Carthage, Missouri and Weeping Water, Nebraska—so called because of the high purity of the deposits.

CCC Calcium Carbonate

CCC Trace Mineral Premixes



The superior quality of CCC Calcium Carbonate begins with THE THREE PURITAN QUARRIES—the purest and most nutritionally available sources of calcium carbonate.

But that's only the beginning. Also important are the extensive CCC laboratory facilities, research and quality control programs, plus the dependable service for which CCC is recognized. Together these factors add up to your best possible source for calcium carbonate.

Write, Wire or Phone

Calcium Carbonate Company

Pioneer Producers of Trace Element Products

520 South 4th Street • Quincy, Illinois

325 Woodmen of the World Building, Omaha 2, Neb., Box 409, Carthage, Mo.

Let CCC RESEARCH Work for You!

- **Calcium Carbonate—any desired grind**
- **Electro (free-flowing) Calcium Carbonate**
- **Iodized Calcium Carbonate—any desired iodine level**
- **Manganesed Calcium Carbonate—any desired manganese level**
- **Iodized-Manganesed Calcium Carbonate—any desired iodine and manganese levels**
- **Trace Mineral Premixes**
- **Shellmaker (calcium grit)**

Linear Programming: Price Mapping Feed Mix Problems

"Regardless of whether hand or electronic computation is used, feed manufacturers are overlooking a valuable money-saving technique if they fail to use linear programming and price mapping in calculating their feed mix problems."

By Dr. Theo H. Ellis
U.S. Department of Agriculture

Manufacturers frequently alter the combination of feedstuffs used in a particular mix as feedstuff prices vary. Why do they make these changes? Obviously, they are striving to manufacture feed at the lowest cost possible and still meet established nutrient requirements.

Under the conventional method of formulating a feed mix, a change in the price of a feedstuff causes those responsible for formulating mixes to try to reduce the cost by changing the combination of feedstuffs.

Usually, the change in price is not sufficient to warrant altering the mix. However, this is not known until numerous new combinations have been tried and negative results obtained. This dilemma can be eliminated entirely by linear programming the problem initially and then using the price mapping technique.

What is price mapping? So far as feed mix problems are concerned, price mapping is a mathematical process for delineating graphically the price areas pertinent to the optimum mixes that result from price variations for any two feedstuffs included in the original optimum mix.

In making a map, the two feedstuffs, prices of which are to be considered as variables, are selected, and their range of price variability is established. The turkey starter mash used for illustrative purposes contained 41.8% soybean meal and 38.8% millet (Table 1). (1)

Dr. Theo H. Ellis

THE AUTHOR—Dr. Ellis is serving as an agricultural economist with the farm economics research division, Agricultural Research Service, U.S. Department of Agriculture. He is stationed at the Alabama Agricultural Experiment Station at Auburn, Ala. A native of Florida, he holds undergraduate and graduate degrees from the University of Florida. He has an M.S. degree in agricultural economics with poultry as a minor, and a Ph.D. degree in agricultural economics with a minor in animal husbandry received in 1957. He has held positions teaching and doing research at North Dakota Agricultural College, and as extension agricultural economist at the University of Arizona.

Small price changes for soybean meal or millet, or both would have a relatively great effect on the cost per ton of feed. But, relatively large price changes for the other feedstuffs would affect the cost per ton very little. Therefore, soybean meal and millet were the feedstuffs selected to illustrate the price-mapping technique.

In computing the linear-programmed optimum mix, prices of $3.60 and $2 per 100 lb. were used for soybean meal and millet, respectively. In mapping the mix, these prices were allowed to vary arbitrarily from $3.10 to $4.10 for soybean meal, and from $1.50 to $2.50 for millet. However, prices lower than $3.30 and higher than $3.90 for soybean meal, and higher than $2.30 for millet are not shown in Figures 1 and 2, as additional optimum mixes do not occur for the greater price spreads originally used. On this basis, the X and Y axes for Figures 1 and 2 were established. (2)

The meanings of the symbols used in Tables 3 and 4 are given in Table 2. If a process appears in a row as well as in a column, the P_o column shows the amount of that feedstuff in the optimum mix. If a process appears in a column only, it is a feedstuff that might be included in the mix eventually.

For the turkey starter mix, all the columns and rows in the last linear programming tableau were used to derive the price map in Figure 2. After the map was completed, it became evident that certain rows and columns did not affect the results. Consequently, only those pertinent to the mapping procedure are given in Tables 3 and 4. The part of Table 3 that is taken directly from the final programming tableau is heavily outlined. The rest is made up of the results of the mapping computations.

(1) For a cost comparison of formulating this turkey starter mash by the conventional and linear programming methods, see Theo H. Ellis and William C. Lockhart, "Computing Feed Mix Problems by Linear Programming" in the Sept. 20, 1958, issue of Feedstuffs, page 84.

TABLE 1. Optimum Turkey Starter Feed Mix and Cost Per Ton

Feedstuff	Price Per Cwt.	Amount Per Ton	Percentage of Total Mix	Cost Per Ton
Programmed Feedstuffs	Dollars	Pounds	Percent	Dollars
Millet	2.00	777.0	38.8	15.54
Soybean meal	3.60	836.3	41.8	30.11
Meat meal 1/	4.75	99.9	5.0	4.75
Dried Fish Solubles 1/	10.50	39.9	2.0	4.19
Wheat middlings	2.00	95.6	4.8	1.91
Calcium Carbonate	1.00	41.7	2.1	.42
Dicalcium Phosphate	5.00	28.6	1.4	1.43
Total	--	1,919.0	95.9	58.35
Added Feedstuffs				
Alfalfa Leaf Meal	2.65	40.0	2.0	1.06
Dried Milk	9.00	40.0	2.0	3.60
Vitamin Additives	--	1.9	.1	2.06
Total	--	81.9	4.1	6.72
GRAND TOTAL	--	2,000.9	100.0	65.07

1/ Although dried fish solubles and meat meal were programmed as a composite feedstuff, they are separated for presentation at this point.

Initial Computations—A review of the calculation of the Z_j and old $Z_j—C_j$ rows is valuable in understanding the calculation of the new $Z_j—C_j$ row. To illustrate, the Z_j value in column P_{12} of Table 3 (.020209) is computed by obtaining the mathematical products of the prices in the C_i column, and the quantity in the corresponding row and P_{12} column, and adding these products as follows:

$Z_j = (.036)(.005963) + (.02)(1.437955) + (.01)(-.001371) + (.05)(.003332) + (.0639)(.000001) + (.02)(-.445882) = .020209$

Then the price (.0225) of corn (P_{12}) found in the C_j row is subtracted from the Z_j value to give the old $Z_j—C_j$ value (—.002291). Each Z_j and old Z_j value is similarly calculated.

The new $Z_j—C_j$ values are calculated, as are the old ones, except that the prices of feedstuffs to be varied are designated as unknowns by substituting X for $.02, the price per pound of millet, and Y for $.036, the price per pound of soybean meal. Again using column P_{12}, the new $Z_j—C_j$ value is:

New $Z_j - C_j = (Y)(.005963) + (X)(1.437955) + (.01)(-.001371) + (.05)(.003332) + (.0639)(.000001) + (.02)(-.445882) - (.0225) = 1.437955X + .005963Y - .031265$

Each of the new $Z_j—C_j$ values is understood to be equal to zero, and a

(2) Prices in Figure 1, and Tables 3 and 4 are expressed in dollars per pound of feedstuffs. In Figure 2, they are expressed in dollars per 100 lb. of feedstuff.

TABLE 2. Symbols Used in Price Mapping Tables

Symbol	Location of Symbol	Meaning of Symbol
C_i	Column	Prices of feedstuffs
C_j	Row	Prices of feedstuffs
P_o	Column	Quantity of each feedstuff in the mix
P_2	Row or column	Slack process
P_3	Row or column	Slack process
P_{12}	Row or column	Corn
P_{13}	Row or column	Millet
P_{15}	Row or column	Barley
P_{16}	Row or column	Soybean Meal
P_{18}	Row or column	Dried fish solubles and meat meal
P_{20}	Row or column	Wheat middlings
P_{23}	Row or column	Calcium Carbonate
P_{24}	Row or column	Dicalcium Phosphate
P_{25}	Row or column	Steamed Bonemeal

TABLE 3. Final Tableau of the Original Programming Problem and Development of the Information for Delineating Area "A"

	C_i		$C_j \longrightarrow$	0	0	Corn .0225	Millet .02	Barley .02	Wheat Middlings .02	Dicalcium Phosphate .05	Steamed Bonemeal .0475	Ratios for Area "B"
	↓		P_o .	P_2	P_3	P_{12}	P_{13}	P_{15}	P_{20}	P_{24}	P_{25}	R
Y	.036	P_{16}	418.154302	- .685993	-.034018	.005963		-.010881			.402763	
X	.02	P_{13}	388.508796	-3.052297	-.079191	1.437955	1.00	.667148			-.226507	582.3
	.01	P_{23}	20.837676	.022272	-.024694	- .001371		.003021			.203428	6,897.6
	.05	P_{24}	14.280429	- .034524	-.001387	.003332		-.002829		1.00	.749228	
	.0639	P_{18}	69.900229	- .000009		.000001		-.000003			.000003	
	.02	P_{20}	47.819215	3.750558	.139290	- .445882		.343545	1.00		-.127485	139.1
		Z_j		29.169138	- .012235	-.000339	.020209	.02	.019711	.02	.05	.046915	
	old $Z_j - C_j$			29.169138	- .012235	-.000339	- .002291		-.000289			.000585	
	New $Z_j - C_j$				-3.052297X	-.079191X	1.437955X		.667148X			-.226507X	
					- .685993Y	-.034018Y	.005963Y		-.010881Y			.402763Y	
					.073507	.002470	- .031265		-.013241			-.010554	
	When Y = .02, Y =				.018165	.026045	.420258		.009374			.037451	
	When Y = .036, X =				.015992	.015721	.021593		.020435			.017017	
	When X = .0185, Y =				.024839	.029542	.781961		1/			.035608	
	When Y = .033, X =				.016666	.017010	.021606		.020385			.012084	
	When Y = .034, X =				.016441	.016585	.021602		.020402			.013862	
	When X = .0163, Y =				.034628	.034664	1.312482		1/			.035371	
	When Y = .0372, X =				.015722	.015216	.021588		.020454			.019553	

1/ Negative feedstuff prices are ignored as they are not feasible.

series of linear equations thus established. These equations are used to delineate the map area applicable to the optimum mix in the P_o column of Table 3, and to designate the feedstuff that comes into the mix as price combinations fall immediately outside the map area that is applicable for the optimum mix in Table 3.

Delineating the Initial Map Area—To delineate the area for the optimum mix in Table 3, actual prices are substituted for one variable price in the new Z_j—C_j equations, and the equations are solved for the other variable price. As the millet price of $.02 was used to derive the original optimum mix, it is substituted for X in the new Z_j—C_j equations, and the prices of Y shown in the first row of the lower part of Table 3 are obtained.

These prices are examined to determine those most nearly equal to but less than, and most nearly equal to but greater than Y=$.036, the original price of soybean meal. They are $.026045 and $.037451, and are underlined at this time. The price point X=$.02, Y=$.037451 is plotted on the map (Figure 1) and X=$.02, Y=$.026045 is ignored as it falls below the lower border of the map.

Reversing the procedure by substituting $.036 for Y, prices of X are obtained as shown in the second row of the lower part of Table 3. These are examined to find those most nearly equal to but less than, and most nearly equal to but greater than X=$.02, the original price of millet. They are $.017417 and $.020435, and are now underlined and plotted on the map.

Two prices in the P_{25} column are underlined, indicating that the points X=$.02, Y=$.037451 and X=$.017417, Y=$.036 are to be connected by a straight line (Figure 1). This line extends above the point X=$.02, Y=$.036, the prices used in calculating the original optimum mix; it is a segment of the upper boundary for the area applicable to the original optimum mix. As these two underlined prices are in the P_{25} (steam bonemeal) column, P_{25} must be in the optimum mix, if price combinations for soybean meal and millet should fall in the area immediately above the line. Therefore, P_{25} is written above the line.

Where is the lower boundary of the area? Substituting X=$.0185 in the new Z_j—C_j equations, it is found that Y=$.029542 and Y=$.036608 bracket the area. These prices are underlined and Y=$.036608 is plotted on the map. Y=$.036608 falls on the line previously determined, and Y=$.029542 is below the border of the map, showing that the area extends from the previously determined line to a point below the lower border of the map. The prices Y=$.026045 and Y=$.029542 are underlined in column P_o. However, as they are outside the map, they need not be given further consideration.

Where do the left and right boundaries cross the X axis on the map?

FIGURE 1. Partial Development of the Price Map for Turkey Starter Mash Allowing for Variations in the Prices of Soybean Meal and Millet

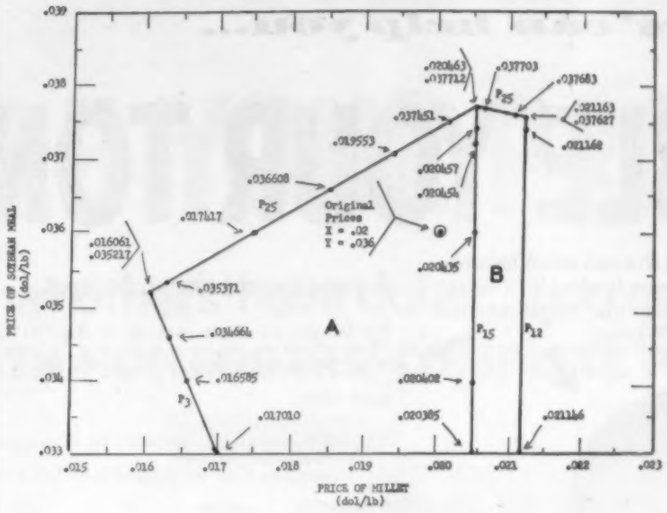
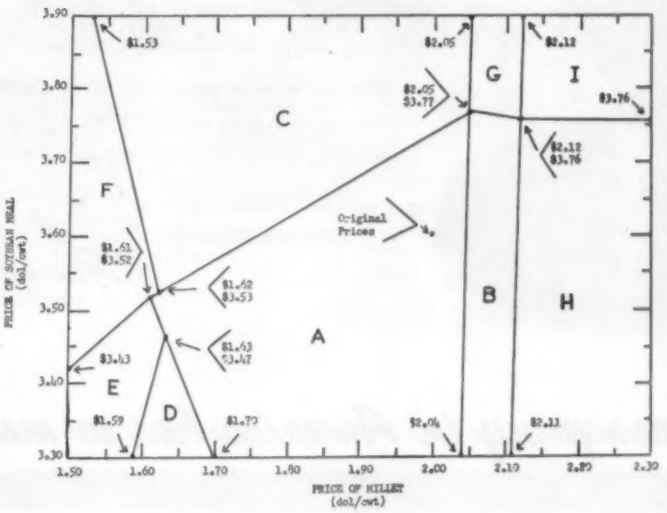


FIGURE 2. Price Map for Turkey Starter Mash with the Prices of Soybean Meal and Millet Variable



The price Y=$.033 is substituted in the new Z_j—C_j equations and X=$.017010 and X=$.020385 are found to bracket the area. They are underlined and plotted on the map. These are the points at which the left and right boundaries, respectively, cross the X axis. Prices X=$.020435 and X=$.020385 are underlined in the P_{15} (barley) column. Therefore, they are connected by a line and P_{15} is written to the right of the line.

How wide is the area? Substituting Y=$.034 in the new Z_j—C_j equations gives prices of X=$.016585 and X=$.020402, which bracket the area. They are underlined and plotted on the map. X=$.017010 and X=$.016585 are underlined in the P_3 column, and thus can be connected by a line, with P_3 written to its left to denote that P_3 will enter the mix when price combinations for soybean meal and millet fall to the left of the line. The price X=$.020402 in the P_{15} column falls on the line formed by X=$.020435 and X=$.020385, and needs no further consideration.

If extended and other areas do not intervene, the left and upper boundaries of the area will meet. To verify that other areas do not intervene, X=$.0163 is substituted in the new Z_j—C_j equations, giving Y=$.034664 and Y=$.035371 that bracket the area. These prices extend the left and upper boundaries by falling in the P_3 and P_{15} columns, respectively. They are underlined and plotted on the

(Turn to page 22)

TABLE 4. Development of the Information for Delineating Area "B"

	C_i		C_j ⟶	0	0	Corn .0225	Millet .02	Barley .02	Wheat Middlings .02	Dicalcium Phosphate .05	Steamed Bonemeal .0475	Ratios for Area "H"
	↓		P_o	P_2	P_3	P_{12}	P_{13}	P_{15}	P_{20}	P_{24}	P_{25}	R
Y	.036	P16	419.668866	- .567203	-.029606	- .006159			.031673		.398725	
X	.02	P13	295.646162	-10.335702	-.349685	2.303836	1.00		-1.941952		.021063	128.3
	.01	P23	20.417173	- .010709	-.025919	.002550			- .008794		.201549	8,006.7
	.05	P24	14.674207	- .003639	-.000240	- .000340			.008235	1.00	.716178	
	.0639	P18	69.900647	.000024	.000001	- .000003			.000009		.000002	
	.02	P25	139.193454	10.917225	.405449	-1.257885		1.00	2.910827		-.371087	
		Z_j	29.209405	- .009076	-.000222	.019834	.02	.02	.020842	.05	.046808	
	old $Z_j - C_j$		29.209405	- .009076	-.000222	- .002666			.000842		-.000692	
	New $Z_j - C_j$			-10.335702X	-.349685X	2.303836X			-1.941952X		.021063X	
				- .567203Y	-.029606Y	-.006159Y			.031673Y		.398725Y	
				.218057	.007838	-.018449			.038541		-.015467	
	When X = .0206, Y =			.009066	.021114	1/			.046151		.037703	
	When Y = .033, X =			.019286	.019620	.021146			.020385		.109624	
	When Y = .0374, X =			.019015	.019249	.021162			.020457		.026350	
	When X = .021, Y =			.009775	.016720	1/			.070723		.037683	

1/ Negative feedstuff prices are ignored as they are not feasible.

UNLOCK MORE BEEF FROM YOUR FEED with feed enzyme
ZYMO-PABST
for details write
PABST BREWING COMPANY
ANIMAL FEED DEPARTMENT
MILWAUKEE 1, WISCONSIN

It's DANNEN for GRAIN and FEED INGREDIENTS
- Bran
- Shorts
- Linseed Meal
- Cottonseed Meal
- Soybean Oil Meal
- Meat Scraps
- Sugar
- Defluorinated Phosphate
- Feed Supplement Urea
- Dried Skim Milk
- Dried Buttermilk

DANNEN
DANNEN MILLS, INC.
Grain and Jobbing Division
St. Joseph, Mo.
Phone: Adams 3-6161

Honeggers' can help you...

DOUBLE YOUR TONNAGE

Watch this area each month for a new dealer who has Doubled His Tonnage and Tripled His Profits on the Honegger Program.

Leonard Cordes, Manager
FARMERS GRAIN & SUPPLY
Ulysses, Nebraska

To PROGRESSIVE FEED DEALERS

We bought our first carload of Big "H" Feeds, manufactured at Honeggers' New Plant in Lincoln, Nebraska, last year. We have bought many more since then.

The response of our farmers to Honeggers' fine feeding programs has been so tremendous that we bought four full cars of feed during a recent Trainload Promotion.

We are also very enthusiastic about Honeggers' Complete Program of Livestock and Poultry Equipment, Honegger Farm Buildings, as well as being able to sell National Champion Honegger Layers.

There is no finer program that we know of anywhere. We have doubled our tonnage with Honeggers' Complete Program and we know that any progressive feed dealer anywhere can do the same.

Leonard Cordes

FARMERS GRAIN & SUPPLY

No other feed company in America has so much to offer! →

EXCLUSIVE TERRITORY protection gives the Honegger Dealer plenty of room to grow. A piddling dealer at every little crossroads is not Honeggers' idea of effective distribution.

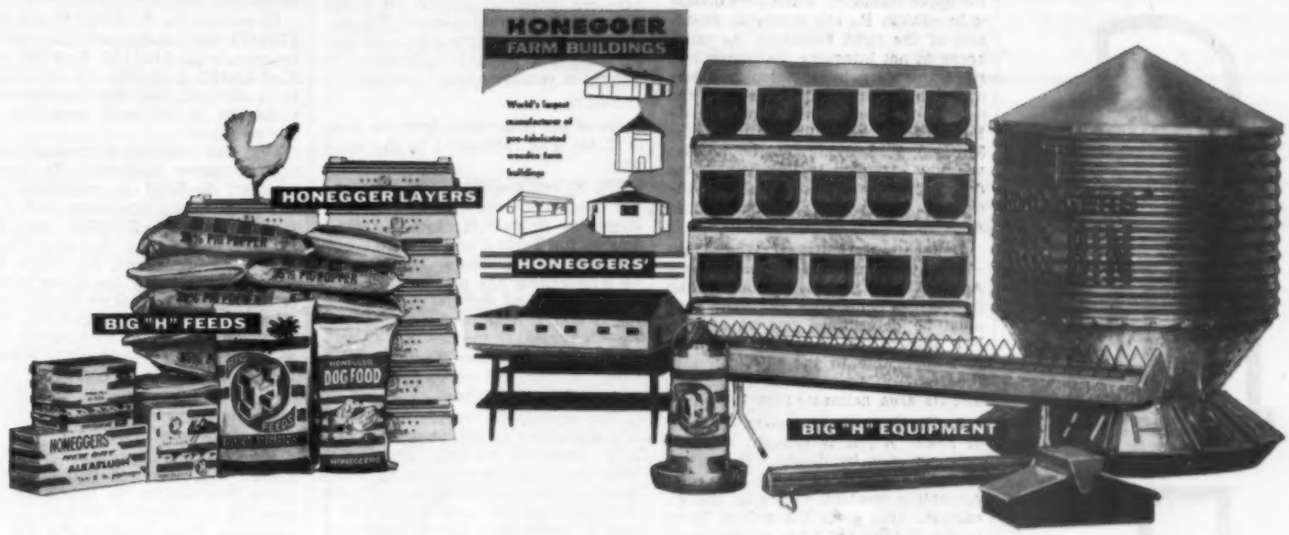
DEALER TRAINING schools at Fairbury-Forrest and monthly district meetings help Honegger dealers and their sales personnel make sales through service. Their know-how and self-confidence makes selling easy, more effective.

SALES ASSISTANCE from well trained, enthusiastic district managers produces new business and keeps Honegger dealers inspired. Product specialists, such as building and equipment salesmen, help dealers close big sales.

LOCAL PROMOTIONS and "Planned Selling" that move 75-150 tons of feed out of the dealer's stores are not uncommon for Honegger dealers—with bulk of business on cash basis, too. Honeggers help plan and man open houses, hay-makers and ice breakers.

TRIPLE YOUR PROFITS

What others have done....you can do also WITH HONEGGERS' COMPLETE PROGRAM



➔ Write, phone or wire collect for complete details . . . *DAY or NIGHT* . . . Do it today!

SINGLE SOURCE OF SUPPLY gives Honegger dealers over 190 products sold by no one else in his territory. Combination shipments reduce freight costs, cuts dealer's equipment inventory because you are only a few days away from Honeggers' warehouse.

HONEGGER RESEARCH FARM has attracted over 40,000 visitors in past ten years. Practical research and convincing demonstrations here keep dealers and customers sold on Honegger know-how, and produce more dealer profits!

PATRONAGE DIVIDEND gifts make real boosters of farm wives and kids. Coupon-saving customers get valuable premiums direct from Honeggers without bother or expense on dealer's part. Result: terrific customer loyalty . . . REPEAT PROFITS!

BULK FEED SERVICE at Honeggers' employs king-sized fleet of hopper cars and modern bulk trucks. Honeggers' bulk farm bins are profit-makers that help dealers sew up business.

Ray Ewing
RESULTS
Supplies
Unsurpassed
Local
Technical
Service
For Planning
Productive &
Profitable
Feed Formulas
Call
Your Ray Ewing
Representative
TODAY!
The Ray Ewing Company
Pasadena, California
AMES, IOWA
FORT WORTH, TEXAS
COUNCIL BLUFFS, IOWA
LANCASTER, PENNSYLVANIA

map. The exact point of intersection is determined by solving simultaneously the new Z_1—C_1 equations from columns P_5 and P_{22}, Table 3. These are the equations for the left and upper boundaries, respectively, as is indicated by the appearance of P_5 and P_{22} beside these boundaries. Solving these equations gives X=$.016061, Y=$.035217 as the point of intersection. The upper and left boundaries are extended to this point.

The area applicable to the original optimum mix is delineated except for the upper right corner. Substituting Y=$.0372 in the new Z_1—C_1 equations to determine whether other areas intervene between the upper and right boundaries gives the prices X=$.019553 and X=$.020454 that bracket the area. These prices are underlined and plotted. The price X=$.019553 is in the P_{24} column and on the upper boundary, while X=$.020454 is in column P_{12} and forms an extension of the right boundary. As other areas do not intervene, the upper and right boundary intersection is determined by solving simultaneously the new Z_1—C_1 equations from columns P_{12} and P_{22}, Table 3. The result is X=$.020463, Y=$.037712. The boundaries are now extended to this point, thus delineating the area applicable to the original mix, which is designated as Area "A".

Delineating Additional Map Areas—The optimum mix for areas outside Area "A" must be calculated and the price areas delineated. However, they must be determined one at a time. For illustrative purposes, only the mix applicable to the price area to the right of Area "A" is calculated, and its area delineated on the map.

As P_{24} (barley) appears to the right of Area "A", it is brought into the optimum mix by dividing the values in the P_5 column of Table 3 by their respective positive values in the P_{24} column. This gives the values found in the "Ratios for Area B" column of Table 3.

The row (feedstuff) that is to be replaced by P_{24} (barley) is the row that has the smallest ratio. (This methodology is identical to that used in linear programming to determine the row that will be replaced by an incoming process.) The smallest ratio is 139.1 in the P_{22} (wheat middlings) row. Wheat middlings will be replaced by barley in the optimum mix applicable to the new map area.

A table similar in form to Table 3 is prepared. The column and row headings are copied, with one exception. As P_{24} is to replace P_{22} as a row and in the optimum mix, it and its price ($.02) replaces P_{22} and its price ($.02). The new table (Table 4) is ready for entry of the new values that are to be calculated.

Each value in the P_{22} row of Table 3 is divided by the value at the intersection of the P_{22} row and P_{24} column (.343545), and the result is entered in the corresponding position in Table 4. To illustrate the calculation of the other entries in Table 4, the quantity for the space at the intersection of the P_{24} row and P_5 column (419.668866) is calculated by subtracting from the quantity in the corresponding space of Table 3 (418.154302) the product of the quantity in the same row (P_{24}) and the P_{22} column of Table 3 (—.010881), and the quantity in the P_{24} row and P_5 column of Table 4 (139.193454).

418.154302—[(—.010881)(139.193454)]=419.668866

For an additional illustration, the quantity for the space at the intersection of the P_{24} row and the P_{23} column of Table 4 (.748178), is calculated by subtracting from the quantity in the corresponding space of Table 3 (.749228), the product of the quantity in the same row (P_{24}) and the P_{23} column of Table 3 (—.002829), and the quantity in the P_{24} row and P_{23} column of Table 4 (—.371087).

.749228 — [(—.002829)(—.371087)] = .748178

Each of the other entries in the body of Table 4 is calculated in the same way.

The Z_1 and the old Z_1—C_1 rows are not used in price mapping. However, they may be calculated in the same way as for Table 3 and used to check the new Z_1—C_1 values. This is done by substituting the original prices of millet ($.02) and soybean meal ($.036) for X and Y respectively in the new Z_1—C_1 values. If the new Z_1—C_1 values are correct, the results will be equal to the old Z_1—C_1 values in the corresponding columns.

The new Z_1—C_1 values in Table 4 are calculated as are those in Table 3. To delineate the area on the price map that is pertinent to the optimum mix found in the P_5 column of Table 4, prices must be substituted for X and Y in the new Z_1—C_1 equations. Points on the upper and lower boundaries of the new area are determined by substituting X=$.0206 in these new Z_1—C_1 equations.

It is found that Y=$.037703 and Y=$.021414 bracket the area, with the latter falling outside the lower border of the map. These two prices are underlined in Table 4. Then the point X=$.0206, Y=$.037703 is plotted on the map. As the new area extends below the lower border as is indicated by Y=$.021414 falling below the border, Y=$.033 is substituted in the new Z_1—C_1 equations to determine the width of the new area along the lower border (X axis) of the map (Figure 1). The price X=$.020385 is common to the new area and to Area "A" as it was determined in delineating each of the areas. This is as it should be as the two areas join along the line extending upward from this point. The point X=$.021146, Y=$.033 is a point on the right boundary of the new area.

The width of the new area near its upper boundary is determined by substituting Y=$.0374 in the new Z_1—C_1 equations and finding that X=$.020457 and X=$.021162 bracket the area. These prices are underlined in Table 4 and plotted on the map. The point X=$.020457, Y=$.0374 falls on the right boundary of Area "A" and, therefore, is common to both areas.

Upon examining the underlined prices in Table 4, X=$.020385 and X=$.020457 are found in the P_{22} column and thus form a straight line. However, this line was drawn in delineating Area "A". Wheat middlings must be in the optimum mix for the area to the left of this line of these prices are in the P_{22} column. The area to the left of the line is Area "A" and the optimum mix includes wheat middlings. (See P_5 column, Table 3.)

In column P_{12}, X=$.021146 and X=$.021162 are underlined. Therefore, the points X=$.021146, Y=$.033 and X=$.021162, Y=$.0374 are connected by a straight line, thus establishing a portion of the right boundary of the new area.

Only one point has been established on the upper boundary. To locate another, X=$.021 is substituted in the new Z_1—C_1 equations, and it is found that Y=$.016720 and Y=$.037683 bracket the area. These prices are underlined. The price, Y=$.016720, lies below the lower border of the map and needs no further consideration. However, X=$.021, Y=$.037683 is plotted. Y=$.037703 and Y=$.037683 are underlined in column P_{23}. These points are connected by a straight line on the map, thus forming a major part of the upper boundary of the new area.

Evidently the upper and right boundaries will intersect without other areas intervening. To determine the point of intersection, the new Z_1—C_1 equations from columns P_{12} and P_{24} of Table 4 are solved simultaneously, giving X=$.021163, Y=$.037627 as the point of intersection. The upper and right boundaries are extended to this point and the new area is delineated. It is designated as Area "B" and the pertinent optimum mix is found in the P_5 column of Table 4.

The Complete Price Map—Further explanation of the steps used in developing the complete price map given in Figure 2 would be repetitious as the same procedure used for Areas "A" and "B" was used for each additional area. However, for those who wish to become proficient at price mapping, it would be advisable to develop the complete map as an exercise, and check the results with Figure 2.

The optimum mix for each of the map areas is given in Table 5. Mix "A" is applicable for all price combinations for millet and soybean meal

TABLE 5. Optimum Turkey Starter Mash Mix Per Ton of Feed, Price Map Areas as Presented in Figure 2

Feedstuff	Unit	Feed Mix for Area								
		A	B	C	D	E	F	G	H	I
Soybean Meal	Lb.	836.3	839.3	821.0	859.7	853.8	838.9	823.7	841.4	825.7
Millet	Lb.	777.0	591.3	785.7	831.4	854.8	867.8	590.5		
Barley	Lb.		278.4					292.9	611.5	625.6
Corn	Lb.								256.7	256.3
Wheat Middlings	Lb.	95.6		100.5						
Dried Fish Solubles	Lb.	39.9	39.9	39.9	39.9	39.9	39.9	39.9	39.9	39.9
Meat Meal	Lb.	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
Calcium Carbonate	Lb.	41.7	40.8	33.9	58.6	41.1	33.1	32.8	40.2	32.1
Dicalcium Phosphate	Lb.	28.6	29.3		29.5	29.4			29.4	
Steamed Bonemeal	Lb.			38.1			39.4	39.2		39.3
Alfalfa Leaf Meal	Lb.	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Dried Milk	Lb.	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Vitamin Additives:										
A ... USP Units	10,000 1/	546.141	539.341	546.245	547.964	548.047	548.255	539.095	482.446	482.287
Riboflavin	Gm.	3.658	3.569	3.673	3.723	3.731	3.750	3.580	3.221	3.233
Pantothenic Acid	Gm.	7.411	7.181	7.475	8.016	8.056	8.158	7.236	5.333	5.391
Choline	Gm.	283.545	188.395	300.220	302.095	309.470	328.095	200.645	2/	2/
Niacin	Gm.	25.498	25.203	25.446	28.865	28.729	28.848	25.138	20.981	20.923
Total weight	Cwt.	20.009	20.006	20.009	20.010	20.009	20.010	20.006	20.001	19.999
Cost Range 3/										
Low	Dol.	60.23	62.71	61.56	59.39	58.62	59.77	66.74	62.69	66.55
High	Dol.	66.88	67.04	67.98	61.19	61.44	63.98	68.22	66.56	67.71

1/ Equivalent to one gram of "Nopcay 10-10,000 A."
2/ Supplied in excessive amounts by the programmed mix.
3/ Maximum and minimum costs for map areas shown on Figure 2.

that fall in Area "A". This is true also for the other mixes and map areas.

Comments—As linear programming and price mapping are mathematical, preciseness is essential. In computing the table entries, a sufficient number of significant digits should be carried to eliminate the misleading effects of rounding errors. The number to be carried must be decided for each problem. So long as it is not zero, each quantity should be entered in the tables. Normally, blank spaces are used to designate zero entries.

The price-substitution sequence for X and Y in the new Z_j—C_j equations is not routine; it is determined by logic. However, in most situations, it is probably better to alternate the substitutions. Price substitutions near boundary intersections can prove to be illogical. If this is the case, try another price farther from the intersection.

The simultaneous equations used in determining the boundary intersections for an area need not come from the table that gives the optimum mix for that area. For example, the lower left corner of Area "C", Figure 2, was calculated by using the P_{35} new Z_j—C_j equations from Table 3, which gives the optimum mix for Area "A" and an equation from another table that gave the optimum mix for Area "C".

Probably the same results as those obtained in Figure 2 could be developed on an electronic computer by recalculating the programming problem for each map area, using price combinations that fall slightly outside the respective boundaries of the areas previously developed. It is believed, however, that it would be best to select price combinations near the midpoint of the boundaries of the preceding areas.

If a choice of boundaries is available and one is longer than the others, price combinations outside its midpoint should be used first. For example, in Figure 2 that part of the left boundary of Area "A" above Area "D" is shorter than the left boundary of Area "D". Furthermore, a price combination outside the midpoint of Area "A" would have been used to develop Area "D". Therefore, in all probability, a price combination outside and near the midpoint of the left boundary of Area "D" should be used to develop Area "E".

After the price combination has been selected and the problem reprogrammed, the final tableau would be used to delineate the applicable map area by using the procedure that was used in delineating Area "A". Although this procedure has not yet been tested because of lack of time, facilities and resources, the machine computation cost would be increased considerably. Probably, however, it would be more economical than hand computation because of the savings in computation time and the reduced possibility of making a large number of time-consuming errors.

Regardless of whether hand or electronic computation is used, feed manufacturers are overlooking a valuable money-saving technique if they fail to use linear programming and price mapping in calculating their feed-mix problems.

ARTHUR E. DAVIS INJURED

TUCSON, ARIZ.—Arthur E. Davis, an employee of Yancey Sales, Inc., Scottsdale, Ariz., lost an arm while adjusting a loading conveyor belt recently at Tucson Fertilizer Co. His arm was crushed between a roller and a bearing, and amputation was necessary. Mr. Davis formerly worked for Deel, Inc., Salina, Kansas, selling to the grain trade.

BUSINESS MANAGEMENT CONSULTANTS

A staff, with years of experience, qualified to provide counsel and analyze the problems of industry and business of all types—large and small—

J. H. Burrell, Pres.

ORGANIZATION
ADMINISTRATION
PRODUCTION
NUTRITION
MARKET STUDIES
SALES & MERCHANDISING
PERSONNEL PLACEMENT
ADVERTISING & PROMOTION
PERSONNEL TRAINING
FORMULATION
COSTS — MARGINS — PROFITS
SPECIAL STUDIES

We can bring to your business unlimited knowledge, accumulated through the years, to help lower costs and build profits.

Call or Write for a Personal Interview

JAMES H. BURRELL & COMPANY, INC.

3615 Olive Street Phone—JEfferson 5-0715 St. Louis 8, Mo.

FARMERS FRIEND MINERAL FEED

WRITE FOR DELIVERED PRICES

FARMERS FRIEND MINERAL CO.

NAPOLEON, OHIO

SNOW WHITE

OYSTER SHELL

- Steady Profits
- Highest Quality
- Best Service

White Shell

CORPORATION

Jacksonville, Florida

Distributed by

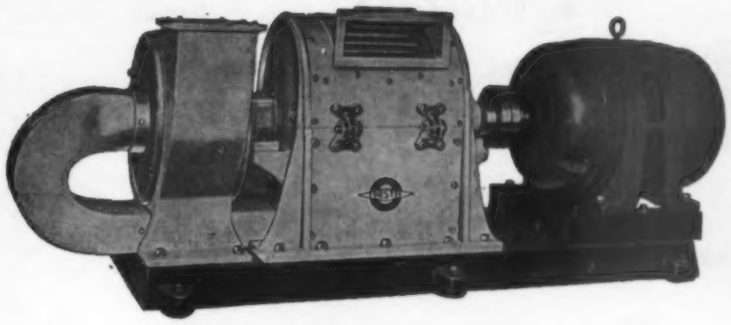
EDWARD R. BACON GRAIN CO.

177 Milk St. Boston 9, Mass.

Use FEEDSTUFFS Want Ads for RESULTS

FORSTER HAMMER MILLS

Serve Better . . . Last Longer!

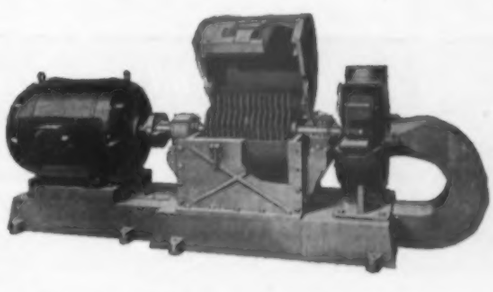


The Aristocrat of the Milling Industry

☆ Heavy construction ☆ Continuous service ☆ Carburized hammers
☆ Extra-large main shaft of alloy ☆ Shock-proofed steel
☆ Vibrationless performance ☆ Cast alloy steel fan

Proved by thousands of installations

Want quality? dependability? low maintenance? Specify a Forster Hammer Mill for your needs. Here's the mill that's proved itself all over the world. Forster Hammer Mills have the precision engineering of a fine watch, with every part machined to give a smooth, vibrationless performance. Forster Mills have the stamina to take the roughest punishment . . . through the years. A true balance of air, screen surface and power to insure lasting efficiency. There's a Forster Hammer Mill that's just the right size to most efficiently serve you. Call or write for information, now.



• Sizes from 15 to 125 H. P.

At Your Service . . . We Fly Our Own Planes

Send for complete details, today

MANUFACTURING FORSTER COMPANY

ADA, OKLA FEderal 2-6020

FORSTER MANUFACTURING CO., ADA, OKLA.

Gentlemen:

Please send complete details on Hammer Mills

Name .....

Company Name .....

Address .....

City ..... State .....

Feed Control Comment

By BRUCE POUNDSTONE

Secretary, Association of American Feed Control Officials

Kentucky Agricultural Experiment Station, Lexington

States Relations Meeting

As the time approaches for the 51st convention of the American Feed Manufacturers Assn., held this year in conjunction with the sixth National Feed Show, attention is called to the "states relations" meeting. This meeting, where representatives of the feed industry and control officials exchange ideas on common problems is one of the traditions of this annual convention.

The AFMA has a feed control relations committee, which represents the focal point for channeling questions within the AFMA and clearing them before presentation to the Association of American Feed Control Officials. Likewise, the AAFCO has a states relations committee. This, too, serves as a focal point for clearing questions with industry that cannot be otherwise handled in other committees or by investigators.

These two committees hold separate meetings upon call and twice a year hold a joint meeting, one of which is during the AFMA annual meeting. This year the meeting is scheduled for Wednesday night, May 13, at the Conrad Hilton.

A wide variety of topics is the basis for lively discussion at these meetings. Topic suggestions are collected in advance and where preparation is necessary, such is provided. Any feed manufacturer or industry man having a special problem he would like to see discussed should submit the questions to either the chairman of the AFMA committee or the chairman of the AAFCO committee. Al Smith, Central Soya Co., Fort Wayne, Ind., is chairman of the AFMA committee and Wally Griem of Wisconsin is chairman of the AAFCO committee.

The May 13 meeting at the Conrad Hilton is open to anyone. Everyone present is invited to participate and encouraged to freely express his views. Questions to be discussed that night should be submitted as soon as possible.

Indiana Feed Law

The April 4 issue of this column reviewed the latest thinking on the application of feed laws to feeds sold under contract. The Indiana General Assembly recently enacted legislation as outlined in the April 4 article. This action became effective with the passage of the bill. The term "contract feeder" is defined and the types of feed under contract that are covered by the Indiana feed law are spelled out.

E. G. Cherbonnier, feed advisor, Grain & Feed Dealers National Assn., comments in Feed and Feeding Digest that "in our opinion they have the right answer." (This comment referred to the committee report.)

As contract feeding has grown in importance it has become more and more necessary that the relationship of this type of operation to feed laws be clearly defined. It is a credit to the industry and control officials that an acceptable understanding of this matter is being achieved.

'WHEY' DOWN YONDER IN THE CORN FIELD

MADISON, WIS. — University of Wisconsin researchers have found a new use for whey. They report that it has some potential as fertilizer.

Out of an annual production of about 5 billion pounds in Wisconsin, less than half is processed for feed products. The rest has been a disposal problem, according to Dr. A. E. Peterson, Dr. H. E. Calbert and W. J. Sharratt of the Wisconsin Experiment Station.

They said a ton of whey contains about 3 lb. nitrogen, ¼ lb. phosphorus, and 3½ lb. potassium plus small amounts of calcium, sodium, chlorine and magnesium. Three tons of whey has about as much plant food as one ton of manure, the researchers said.

A four-year study shows that hay and pasture crops will benefit from an application of 20 to 50 tons an acre. Similar applications at least two weeks before planting will benefit corn, they said. It is not recommended for oats, because of danger from lodging.

Whey also improves the soil structure, the researchers said, making it easier to work, increasing water filtration and thereby reducing soil erosion.

for market hogs: from farrowing through finishing...
for breeding stock: for breeding, gestating, lactating sows

Borden's
krepro
and hopro

give top feed performance at reduced cost

With KREPRO and HOPRO you can build your own swine feed tonnage with a "life-cycle" program that meets the changing nutritional needs of growing swine—at unusually low cost.

for creep feeds and pig starters... krepro

For pigs up to 50 lbs., KREPRO supplies all fish, whey, and fermentation factors,* vitamins, antibiotics, and trace minerals — in amounts needed for fast starting and maximum feed efficiency. Yet KREPRO may actually save you money — it contains saccharine and thus can save up to $20. per ton on sweetener costs.

for pigs over 50 lbs.... hopro

Economically formulated, HOPRO provides all needed micronutrients, growth and fermentation factors* — for more and better lean-meat-type-hog production and reproduction. Available in three forms so that you can rotate antimicrobials for development of natural immunities and avoidance of drug resistance: HOPRO AB (contains penicillin and bacitracin); HOPRO 3-N (contains 3-nitro-4-hydroxyphenylarsonic acid); and HOPRO R (no antimicrobial guarantee).

It has been four years since Borden first proposed Life-Cycle feeding with KREPRO and HOPRO. Are you upgrading your feeds with this proven feed program?

Write for complete data and price schedules

THE Borden COMPANY
FEED SUPPLEMENTS DEPARTMENT
350 Madison Ave., New York 17, N.Y.
MUrray Hill 7-4100 Ext. 680

BETTER FEEDS THROUGH RESEARCH

Laboratories and test farms at Elgin, Illinois

*Both KREPRO and HOPRO have been made possible through Borden's development of PERMACTO-600—the new special blend of fermentation factors.

IT'S Eye Appeal that really COUNTS and
GRAN-I-GRIT
Has Eye Appeal for Poultry of All Ages
NORTH CAROLINA GRANITE CORP.
MOUNT AIRY NORTH CAROLINA

Feed Mixers Products
COLBY
PULVERIZED
Oats or Barley
ROLLED OATS AND FEEDING OATMEAL
COLBY MILLING, INC.
COLBY, WISCONSIN

Arkansas Production Of Turkeys Expanding

FAYETTEVILLE, ARK. — Arkansas is expanding its turkey production at a rapid pace, according to Adlai Arnold, assistant economist, Arkansas Agricultural Experiment Station.

Mr. Arnold said a study shows Arkansas now supplies approximately 3% of the nation's turkeys, and that production is climbing despite continued drops in turkey prices and profits.

The economist said he based his findings on a study of the records from 36 flocks kept by feed companies. The study showed that the number of turkeys produced in the state increased annually from 1951 through 1958, when a slight drop was recorded. However, the U.S. Department of Agriculture predicts an upturn in 1959.

Mr. Arnold found that integration is an important part of the turkey business in Arkansas. He said few producers finance their own operation, apparently preferring to work on a contract basis.

Records used in the research covered about 85,000 birds each year in 1957-1958. Growers in the Arkansas Valley and Northwest poultry area of the state generally contracted to grow the birds from poults to market age for a specified amount based on a "per pound or per bird" figure.

The flock owners contacted in the study agreed that 5,000 birds is the "ideal" size of flock for one person to manage.

Records studied showed that the average live market weight of hens and toms combined was 17 lb. at 24 weeks. They sold for 22.5¢ lb. in 1958, contrasted with about 35¢ in 1951. Average investment ran around $4 a bird, or $20,000 for a flock of 5,000 turkeys.

Feed, poults, and labor made up 93% of production costs, Mr. Arnold reported. Feed accounted for about 70%; poults, 17%; and labor, 6%. Feed conversion was 3.72 lb. of feed per pound of market bird in 1958 and 3.96 lb. in 1957.

Mr. Arnold said persons interviewed agreed that there is a trend toward more complete formula ration feeds as opposed to feeding grains and protein supplements. About 96% of the rations fed in 1958 were formula feeds, he reported.

Republic Bag Moves

ST. LOUIS—After 30 years of operating in a building of 30,000 sq. ft., Republic Bag Co., formerly located at 1540 Blair Ave., is now in its new home at 2508 N. Broadway, St. Louis.

Company officials said the building, a modern fireproof structure of 84,000 sq. ft., is centrally located in downtown St. Louis and has increased loading and unloading truck docks as well as railroad siding.

DIAMOND V BRAND

Fortify your feeds with

YEAST CULTURE

a natural source of

Digestive enzymes - B Vitamins including B_{12} - Unidentified Health and Growth factors - Values not obtainable from any other source.

For All Cattle, Hogs, Sheep, Chickens, Turkeys

Better Health, Growth and Production - Greater feed efficiency - Lower Feed cost

Yeast Culture values proven by state college tests

writes . . . DIAMOND V MILLS, INC. • CEDAR RAPIDS, IOWA

KELLY-DUPLEX **PIT AUGER**

(ear corn conveyor)

a more efficient, more dependable system of pit unloading

1. Handles HUSKED and SNAPPED EAR CORN and all types of small grain.
2. Assures you BIG CAPACITY at LOW HORSEPOWER.
3. Gives you VARIABLE SPEED CONTROL . . . MORE UNIFORM DELIVERY.
4. REQUIRES LESS MAINTENANCE than any other type of pit unloader.

Built to meet your needs, the Kelly Duplex Pit Auger can be furnished in any length with choice of 12", 14" or 16" diameter screw—can have any length hopper opening—can have drive unit located at either end of the machine—and can be equipped with any size motor.

The Kelly Duplex Pit Auger offers you an entirely new system of pit unloading—a system designed to give you better delivery and BIGGER PROFITS. Constructed entirely of heavy, arc welded steel . . . it handles both husked and snapped ear corn as well as all types of small grain—assures an even, uniform flow of material—is smooth and noiseless in operation—and gives you big capacity at low horsepower. Maintenance costs are low because there are fewer moving parts—and far less chance of breakdown—than with any other type of pit unloader. Features include an inspection door at the discharge end . . . an enclosed gear reducer and enclosed roller chain drive, both of which run in oil . . . and variable speed control. An automatic motor control, which keeps auger from causing ampere fluctuation on a hammermill or other machine, is available as optional equipment.

CLIP ALONG THIS LINE . . . FOLD OVER, FASTEN . . . AND MAIL TODAY!

FIRST CLASS
Permit No. 72
SPRINGFIELD, OHIO

VIA AIR MAIL

BUSINESS REPLY ENVELOPE
No postage necessary if mailed in the United States

POSTAGE WILL BE PAID BY

The Duplex Mill and Manufacturing Company
Springfield, Ohio

FOLD OVER ON THIS LINE . . . FASTEN (STAPLE, GLUE, TAPE)

The Duplex Mill & Mfg. Co.
Springfield, Ohio

Yes, I'm interested in the KELLY DUPLEX machinery checked at the right. Please send me full information on these machines without any obligation.

☐ Send me information on Free Mill Planning and Layout Service

☐ Pit Auger	☐ Vertical Feed Mixer	☐ Instant Change Hammermill
☐ Remote Change Hammermill	☐ Twin Molasses Mixer	☐ Vertical Screw Elevator
☐ Electric Truck Hoist	☐ Chain Drag	☐ Corn Sheller with Blowers
☐ Regular Corn Sheller	☐ Pitless Corn Sheller	☐ Combined Sheller-Cleaner
☐ Gyrating Cleaner	☐ Corn Scalper	☐ Corn Crusher
☐ Corn Cutter and Grader	☐ Corn-Crusher-Regulator	☐ Bucket Elevator
☐ Electric Bag Cleaner	☐ Forced Air Carloader	☐ Magnetic Separator
☐ Grain Feeder	☐ Grain Blower	☐ Complete Line Catalog

NAME _____

TITLE _____ PHONE _____

FIRM _____

CITY _____ STATE _____

FEEDSTUFFS

1959 FEEDSTUFFS ANALYSIS TABLE

Copyright 1959, by Charles H. Hubbell

This chart is published to assist feed manufacturers and students of nutrition in formulating feeds. The values given are not average, but carry a "margin of safety" so that the feed should contain at least as much protein, fat, minerals and vitamins, and not as much fiber as the final calculations show.

Protein %	Fat %	Fiber %	Calcium %	Phosphorus %	Ash %	FEEDSTUFF	Productive energy Cal./lb.	Metabolizable energy Cal./lb.	Milligrams Per Lb. Riboflavin	Niacin	Pantothenic acid	Choline	Vit. E Alpha-tocopherol	Arginine %	Lysine %	Amino Acids Methionine %	Cystine %	Tryptophane %	Glycine %
20	2.5	18.0	1.70	.30	12.0	Alfalfa leaf meal (dehy.)	350	700	7.00	16.0	15.0	500	...	.9	1.1	.45	.35	.35	...
20	2.5	18.0	1.70	.22	12.0	Alfalfa leaf meal (suncured)	350	...	6.0	16.0	12.0	500	25.0	.9	.90	.45	.35	.35	...
17	2.0	26.0	1.40	.20	11.0	Alfalfa meal (dehydrated)	300	620	6.5	14.0	13.5	400	82.0	.8	.9	.40	.30	.27	...
15	1.5	30.0	1.30	.20	9.2	Alfalfa meal (dehydrated)	240	...	5.0	12.0	12.0	400	...	.7	.70	.35	.27	.27	...
13	1.5	33.0	1.20	.20	9.0	Alfalfa meal (either type)	230	350	4.0	9.0	10.0	300	...	...	...	...	...	...	...
11.5	2.0	6.0	0.1	.40	3.0	Barley	800	1,300	0.70	24.0	2.5	450	2.3	.5	.5	.18	.18	.16	...
9	2.0	6.0	.05	.40	3.0	Barley (Pacific Coast)	800	1,300	0.50	20.0	2.5	400	...	.48	.3	.15	.15	.12	...
20	1.0	4.0	.10	.40	6.0	Beans (navy cull)	450	600	1.00	12.0	.5	...	...	...	...	...	...	...	...
8	0.5	21.0	.60	.05	3.8	Beet pulp, dried	200	300	0.30	6.0	.5	370	...	.3	.6	0.0	...	.10	...
80	1.0	1.0	.28	.28	6.0	Blood meal	1,010	1,300	0.70	14.0	.5	300	...	3.5	6.3	1.00	1.50	1.10	4.5
24	6.0	15.0	.20	.45	3.8	Brewers dried grains	1,000	1,150	0.30	18.0	3.9	700	...	1.3	.90	.28	.48	.30	...
45	1.0	2.7	.10	1.40	7.0	Brewers dried yeast	700	1,100	15.0	203.0	50.0	1,750	...	2.2	3.00	1.00	.50	.81	1.7
11	2.0	10.0	.08	.30	2.0	Buckwheat	820	1,200	0.20	20.0	5.0	...	...	.9	.6	.18	...	.18	...
32	5.0	0.0	1.30	.90	10.0	Buttermilk, dried	780	1,250	12.00	7.5	19.0	500	...	1.0	2.20	.67	.37	.41	...
6	2.5	14.0	2.00	.10	7.0	Citrus pulp, dried	420	...	1.00	9.0	5.2	310	...	.28	.20	.08	...	.06	...
20	6.0	12.0	.17	.60	7.0	Coconut oil meal	600	750	.60	13.0	3.0	500	...	2.2	.50	.30	...	.2	...
8.6	3.8	2.5	.01	.25	1.5	Corn (yellow)	1,145	1,580	.50	10.0	2.2	200	1.5	.35	.18	.18	.10	.07	.30
7.0	3.0	8.0	.04	.25	1.4	Corn & cob meal (yellow)	900	1,200	.40	7.2	2.0	160	...	.3	.16	.16	.12	.05	.24
2.3	1.0	30.0	...	...	1.5	Corn cobs	...	...	...	...	...	...	...	...	...	...	...	...	...
20.0	5.5	10.0	.05	.40	3.0	Corn germ meal	1,100	1,500	1.40	15.0	2.3	800	...	1.1	.9	.40	.32	.26	1.1
21	1.5	10.0	.30	.70	8.5	Corn gluten feed	590	900	1.1	30.0	5.8	500	...	.8	.73	.30	.37	.20	...
41	1.5	4.5	.10	.40	4.5	Corn gluten meal	840	1,500	0.70	20.0	4.5	150	...	1.4	.80	1.00	.68	.21	1.5
20.0	1.0	11.5	.08	.40	2.5	Corn oil meal (solvent)	840	...	2.00	19.0	1.5	800	.44	1.1	.9	.40	.32	.26	1.1
36	4.0	16.0	.15	1.00	7.0	Cottonseed oil meal	580	...	1.40	15.0	4.7	1,200	...	2.7	1.4	.54	.90	.45	2.1
41	4.0	13.0	.15	1.00	7.0	Cottonseed oil meal	690	1,100	1.80	17.0	6.5	1,200	3.2	3.0	1.6	.60	1.0	.50	2.4
41	1.5	13.0	.15	1.25	7.0	Cottonseed oil meal (solv.)	560	1,000	2.00	20.0	6.5	1,200	...	3.0	1.6	.60	1.0	.50	2.4
27	8.0	13.0	.09	.35	3.2	Dist. dr. grains (light) (corn)	880	...	1.5	19.0	3.0	900	...	1.0	.90	.40	.18	.20	.1
27	8.0	9.0	.12	.68	5.0	Dist. dr. gr., with sol. (corn)	890	...	4.0	35.0	5.0	1,200	7.0	.9	.7	.50	.35	.20	.5
27	8.0	4.0	.35	1.37	8.2	Distillers dr. solubles (corn)	1,020	1,340	8.0	54.0	10.0	2,200	7.0	1.0	.9	.60	.60	.20	1.1
85.0	3.0	1.0	...	...	3.9	Feathers (hydrolyzed poultry)	800	1,240	.8	8.0	3.5	400	...	5.6	1.5	.52	2.3	.57	6.8
70	7.5	1.0	3.00	2.20	12.0	Fish meal, herring	1,030	...	4.00	40.0	5.0	1,800	...	4.0	7.30	2.00	1.10	.91	5.5
60	7.5	1.0	5.00	3.00	20.0	Fish meal, menhaden	920	1,350	2.00	25.0	4.0	1,500	9.5	4.0	5.30	1.80	.63	.69	4.0
57	8.0	1.0	7.70	3.80	26.0	Fishmeal, red fish	866	...	3.00	18.5	3.0	1,400	...	4.0	6.5	1.73	.59	.60	3.7
65	4.0	1.0	4.5	2.5	19.0	Fish meal, sardine	900	...	2.50	30.0	3.0	1,300	...	2.7	5.9	2.00	.80	.50	4.5
62.0	7.0	1.0	4.0	2.5	20.0	Fish meal, tuna	...	...	4.00	30.0	4.0	1,400	...	5.3	5.2	1.65	1.04	.71	4.2
63	2.0	1.0	6.50	3.50	22.0	Fish meal, white	825	...	4.00	30.0	3.0	700	...	4.2	4.3	1.65	...	.64	...
32	4.0	0.0	.10	.5	10.0	Fish solubles, 50% solids	440	670	6.00	100.0	16.0	1,300	...	1.5	1.7	.60	.21	.12	1.5
10	5.0	6.0	.02	.50	3.0	Hominy Feed (yellow)	850	1,300	1.00	20.0	4.5	460	...	.5	.4	.28	.13	.29	...
11	2.5	2.5	.02	.30	1.8	Kafir corn	1,080	1,450	.50	16.0	5.0	200	...	.35	.25	.18	...	.15	...
34	3.5	8.5	.40	.80	6.0	Linseed meal (old process)	500	650	1.60	18.0	6.0	800	...	2.7	1.3	.84	.66	.56	...
34	0.5	9.0	.35	.75	6.0	Linseed oil meal (solvent)	480	...	1.30	20.0	6.4	800	...	2.7	1.3	.84	.66	.56	...
24	1.5	15.0	.20	.70	7.0	Malt sprouts, dried	...	...	2.30	26.0	20.0	1,000	...	1.0	1.1	.32	...	.41	...
45	6.0	2.5	11.00	5.50	35.0	Meat and bone scraps	660	...	1.4	20.0	1.7	600	...	2.7	2.2	.70	.30	.27	...
50	6.0	2.5	10.00	5.00	29.0	Meat and bone scraps	720	890	1.5	21.0	1.8	750	...	3.0	2.5	.72	.35	.55	7.0
55	6.0	2.5	8.00	4.00	21.0	Meat scraps	760	...	1.6	23.0	2.0	850	...	3.9	3.4	.80	.41	.61	7.0
11	2.5	2.5	.02	.30	2.5	Milo maize	1,110	1,480	0.40	18.0	4.0	280	...	.34	.25	.10	.18	.08	.4
6.0	0.0	0.0	.10	.02	10.0	Molasses, beet	...	...	1.00	17.0	2.0	...	...	...	...	...	...	...	...
3	0.0	0.0	.50	.05	11.0	Molasses, cane	715	910	1.00	20.0	17.0	300	...	...	...	...	...	...	...
0.3	0.0	0.0	.50	.05	8.0	Molasses, corn (hydrol)	...	...	...	...	...	...	...	...	...	...	...	...	...
12	4.0	12.0	.10	.36	4.0	Oats	760	1,200	.50	7.5	5.0	425	1.8	.7	.35	.18	.18	.18	.20
9	4.5	12.0	.10	.35	4.0	Oats (Pacific Coast)	800	1,200	...	...	...	...	...	.50	.30	.19	.17	.10	...
16	5.5	3.0	.05	.40	2.4	Oats, feed, rolled, oat groats	1,150	1,600	0.50	3.7	5.6	500	...	.9	.45	.2	.2	.18	...
2	.5	36.5	.09	.10	6.5	Oat hulls	0.0	...	...	...	...	...	...	...	...	...	...	...	...
3.5	1.0	34.0	.25	.20	6.0	Oat, mill by-product	...	...	0.72	4.6	1.5	200	...	.2	.20	.10	...	.10	...
45	5.5	11.0	.17	.55	5.8	Peanut oil meal (expeller)	850	1,100	2.40	77.5	24.0	800	...	5.3	1.30	.44	.70	.48	2.3
47	1.0	13	.20	.60	4.8	Peanut oil meal (solvent)	760	...	2.40	77.5	24.0	800	...	5.7	1.40	.47	.74	.53	2.6
56.0	14.0	2.0	3.5	1.7	17.5	Poultry by-product meal	900	1,050	4.8	18.0	4.0	2,720	...	2.76	3.7	1.00	1.00	.41	7.1
14	.6	15.5	.10	1.35	16.0	Rice bran (solvent)	710	1,000	1.40	129.0	10.5	...	...	.5	.5	.24	.10	.24	...
11	12.0	4.0	.04	1.40	8.0	Rice polishings	930	1,500	0.90	325.0	4.5	460	...	.50	.50	.21	.10	.19	...
12	1.6	2.5	.01	.30	2.0	Rye	880	1,300	0.70	6.0	3.0	...	7.0	.5	.45	.18	.18	.08	...
18.0	0.5	37.0	.5	.7	6.0	Safflower seed meal	...	...	...	...	...	...	...	1.4	.35	.20	...	.20	...
40	7.0	6.5	2.00	1.30	12.0	Sesame oil meal	700	...	1.50	6.0	2.5	680	...	4.0	1.2	1.44	.59	.80	4.0
43	3.0	12.0	7.00	1.50	28.0	Shrimp meal	400	550	1.80	...	...	2,000	...	2.25	2.02	.72	...	.39	...
34	.5	0.0	1.25	1.00	8.0	Skim milk, dried	600	1,200	9.00	5.0	15.0	500	.17	1.2	2.8	.81	.42	.45	.2
24.0	3.5	9.0	.15	.65	8.0	Sorghum gluten feed	...	...	1.30	24.0	8.0	790	...	1.0	.9	.30	...	.20	...
42.0	4.3	3.5	.04	.30	1.8	Sorghum gluten meal	...	...	.70	15.0	4.0	300	...	1.2	.8	.60	...	.40	...
37	19.0	4.5	.25	.60	4.5	Soybeans	1,025	...	1.20	10.0	5.0	1,300	...	2.1	2.1	.60	.48	.42	1.9
12.0	2.0	30.0	.35	.15	7.0	Soybean millfeed	200	300	1.6	11.0	6.0	...	...	...	...	...	...	...	...
42	3.5	6.0	.20	.60	5.5	Soybean oil meal (expeller)	640	...	1.40	12.0	6.0	1,100	2.5	2.4	2.4	.74	.60	.50	2.3
45	.5	7.0	.25	.60	5.5	Soybean oil meal (solvent)	570	1,020	1.30	12.0	6.0	1,200	.36	2.8	2.6	.79	.62	.53	2.4
51	.5	3.0	.20	.65	5.5	Soy meal (solv.) (dehulled)	650	1,150	1.2	9.5	6.0	1,300	.36	3.1	2.9	.87	.68	.58	2.7
60	8.0	3.0	6.00	3.00	22.5	Tankage	800	1,200	1.00	18.0	1.0	1,000	...	3.0	3.5	.71	.29	.82	6.6
48.0	2.0	2.7	.50	1.60	8.0	Torula dried yeast	700	...	20.0	220.0	24.0	1,300	...	2.6	3.8	.80	.60	.50	2.7
13.5	1.5	2.9	.05	.40	2.0	Wheat, hard	1,020	1,500	0.40	24.0	5.0	350	6.4	.7	.35	.20	.18	.18	.90
9.0	1.7	2.8	.05	.30	2.0	Wheat, soft western	1,000	...	0.40	26.0	4.5	300	...	.55	.32	.17	.18	.18	...
15	3.5	11.0	.10	1.20	6.5	Wheat bran	480	520	1.00	65.0	12.0	460	2.7	1.0	.6	.18	.19	.20	.90
17	3.5	6.0	.05	.70	4.0	Wh. flour midds., gray shorts	720	1,200	0.60	40.0	7.0	450	8.4	.7	.4	.3	.20	.23	...
26	8.0	3.0	.01	1.00	5.0	Wheat germ meal	780	...	2.20	23.5	5.0	1,500	56	1.6	1.6	.30	.50	.30	...
15	3.5	9.0	.10	.90	5.0	Wheat mixed feed	570	...	0.70	50.0	6.0	450	...	...	...	...	...	...	...
16	3.5	3.0	.10	.50	3.5	Wheat red dog	1,000	1,270	0.45	25.0	6.0	450	...	1.0	.6	.10	...	.20	...
16	4.0	8.0	.10	.90	5.5	Wh. std. midds., brown shorts	520	840	0.80	44.0	8.0	460	8.4	.9	.7	.25	.19	.21	.40
14	2.0	2.0	.05	.50	3.0	Wheat flour second clears	1,000	...	0.45	25.0	6.0	450	...	.4	.3	.10	...	.10	...
12	.5	0.0	.80	.70	10.0	Whey, dried whole cheese	700	830	12.00	5.0	20.0	900	.11	.4	1.00	.35	.40	.30	.70

ANALYSIS OF MINERALS—Use the figures guaranteed by the manufacturer. (Calculate ash as 100%.)

	Calcium, %	Phosphorus, %		Calcium, %	Phosphorus, %		Calcium, %	Phosphorus, %
Bone meal, steamed	24	12.0	Defluorinated rock phosphate	34	14.5	Curacao Island phosphate	35	15.0
Bone meal, special steamed	26	13.0	Defluorinated treble phosphate	30	18.0	Dicalcium phosphate	26	18.0
Defluor. super phosphate	31	13.0	Phosphate with colloidal clay	18	9.0	Limestone, 98% calc. carb. and oyster shell flour	38	00.00

Notes on the Feedstuffs Analysis Table

Copyright, 1959, by Charles H. Hubbell

List of Ingredients

The Feedstuffs Analysis Table is published annually to provide a convenient summary of the latest information on the analysis of the most commonly used feed ingredients. Only about one third of the ingredients available for formulation of feeds are listed here because of space limitations. Suppliers of ingredients not listed in this table will be happy to furnish the analysis of their products.

The analyses shown here are intended to be representative of the feedstuffs shown and do not necessarily apply to each manufacturer's production. Use the manufacturer's guarantees where they differ from those on the table.

Feed Formulation

Before one attempts to formulate feeds, he should study the nutritive requirements of the animals. Pamphlets showing the nutritive requirements for poultry and livestock may be obtained by writing the National Research Council, 2101 Constitution Ave., N. W., Washington, D.C.

Be sure in your formulation you make allowances for feeds that are to be fed with grain, for destruction of vitamins in storage, and for other factors which may affect the feed before it is consumed.

Productive Energy

This column gives productive energy values for poultry. Energy values for swine, cattle or other animals will be quite different and this table should not be used for calculating the energy values of other feeds.

Metabolizable Energy

This year the Feedstuffs Analysis table contains a column showing metabolizable energy, for poultry only. Because there is such a wide variation in values reported by various investigators of this subject, it is recommended that these figures presented be used as a rough guide only. A more detailed study of this subject together with more exact values will be found in the book by Harry W. Titus, titled "Energy Values of Feedstuffs for Poultry." Values shown in the Feedstuffs table were estimated or furnished by others from non-copyright material. They may be relatively close or vary widely from the tables given in other publications.

The value for metabolizable energy of fat seems to vary from about 2,600 calories per gram up to 4,400 calories per gram. Where one wishes to obtain relatively close values, it is suggested that you consult your supplier.

Vitamin A—Carotene

The approximate carotene content of commonly used feed ingredients is given. For convenience in formulating poultry feeds you may use the figures shown under Vitamin A to calculate the vitamin A activity obtained from the carotene. Values of vitamin A for 4-footed animals will generally run about 40% of the amount shown under vitamin A.

	Per pound	
	Mg. carotene	Vitamin A
Dehydrated alfalfa		
20% (150,000 A guar.)	90	150,000
17% (100,000 A guar.)	60	100,000
17% (not guar.)	30	50,000
15% (not guar.)	20	33,000
13% (not guar.)	6	10,000
Yellow corn (current crop)	.9	1,500
Corn gluten feed	1.2	2,000
Corn gluten meal	2.4	4,000
Hominy feed	.6	1,000

Corn, corn gluten feed, meal and hominy will contain more carotene than shown in the table above, but much of this carotene is in the form of carotenoids with little vitamin A activity.

Vitamin B_{12}

The range of active vitamin B_{12} present in natural feedstuffs is quite wide, and it is felt that it may be unwise to count too heavily on B_{12} contributions from natural feedstuffs unless the natural feedstuffs are guaranteed to furnish B_{12}. Feedstuffs in the table which contain appreciable vitamin B_{12} are shown below.

Feedstuff	Range of B_{12} activity
Feather meal	.03-.05 milligrams/lb.
Fish meal	.03-.15 milligrams/lb.
Fish solubles	.05-.28 milligrams/lb.
Meat and bone scraps	.01-.05 milligrams/lb.
Meat scraps	.01-.10 milligrams/lb.
Poultry by-product meal	.15-.18 milligrams/lb.
Tankage	.03-.10 milligrams/lb.

Fats in Feeds

Many feed manufacturers wish to use fat in feeds. For poultry feeds figure the fat as 100% and the productive energy content as 2,875 calories per pound. Some fats may run higher or lower than this in productive energy, but this figure is generally safe to use for the average kinds of fats now used in feeds.

Be sure fats are stabilized.

Conversion Tables

Units or mgm. per gram	Units or mgm. per lb.
50	22,700
100	45,400
200	90,800
300	136,200
400	181,600
500	227,000
1,000	454,000

1 pound =454 grams
1 ounce=28.4 grams
1 gram=1,000 milligrams
1 milligram=1,000 micrograms, also called gammas (γ).

1 microgram per gram=1 part per million

.3 microgram of vitamin A=1 unit of vitamin A.

To convert milligrams per gram to milligrams per pound, multiply by 454.

To convert micrograms per gram or per pound to milligrams per gram or per pound, divide by 1,000.

To convert milligrams per pound to micrograms per gram or parts per million, divide by .454 or multiply by 2.2.

Vitamins D_2 and D_3

Irradiated yeast or plant sterols provide Vitamin D_2 which is excellent for 4-footed animals but not suitable for poultry.

Vitamin D from irradiated animal sterols (D-activated animal sterol) or that from fish liver oils provides vitamin D_3 which is suitable for both poultry and 4-footed animals.

Vitamin E

Figures shown in the vitamin E column are in milligrams of alpha-tocopherol per pound of ingredient. For conversion to International units, assume 1 mgm. equals 1 International Unit of vitamin E. During this past year research work has shown that in some ingredients, the alpha-tocopherol naturally present does not seem to be biologically available. Hence, where vitamin E is a critical factor, such as in turkey breeder rations, one should give consideration to the sources of vitamin E and provide ample quantities.

Amino Acids

The old saying that "a chain is no stronger than its weakest link" certainly applies to the amino acid balance in feeds for poultry and swine. The amino acids which are most likely to limit the performance of feeds are shown in the Feedstuffs Analysis Table. Be sure you have enough of these amino acids in your feed for maximum efficiency.

Data on the amino acid content of some feedstuffs is lacking in many cases, and conflicting in other cases. An attempt has been made in this table to provide values which you may safely use in figuring amino acid calculations, but no margin of safety is figured for amino acids as has been provided for in the rest of the Feedstuffs Analysis Table.

Acknowledgement

Data for the preparation of the Feedstuffs Analysis Table have been received from many laboratories throughout the country. To the chemists and research workers who have so graciously cooperated in supplying this information, we wish to express our sincere gratitude and thanks.

ARID-AIRE
THE ONLY GRAIN DRYER AVAILABLE ON A TRIAL PLAN

THE BEST WAY TO FIND OUT IF YOUR BUSINESS WILL JUSTIFY A GRAIN DRYER INVESTMENT IS TO TRY ONE. INVESTIGATE ARID-AIRE'S TRIAL PROGRAM

Exclusive ARID-AIRE design features are unmatched by any other dryer

- Automatic, self-operating. No loading, unloading or operating attendance required.
- Heavy insulation increases drying efficiency, saves fuel dollars . . . lowers operating costs.
- Self-cleaning — saves time and labor.
- Horizontal design is more efficient and trouble-free — no pressure, no packing, no clogging.
- Delivered completely assembled, ready for fuel and electric connections.
- Safest dryer made — based on ratings made by leading insurance companies.

ARID-AIRE is priced to save you money and built to give you BIG capacity.
IT'S YOUR BEST GRAIN DRYER BUY.

Manufactured by
DAYCOM, INC.
Affiliated with The DAY Company
Dept. A, Flour Exchange Bldg.
Minneapolis 15, Minnesota

Gentlemen:
Please send literature and full details regarding ARID-AIRE's Trial Plan offer.
Name
Address
City State

RUGGED

Raymond MULTIWALL BAGS serve Farm Needs

Raymond Bag Corporation
Middletown, Ohio
A Division of Albemarle Paper Mfg. Co.
District Offices:
New York • Chicago • Kansas City
Baltimore

Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.

How Much Floor Space Per Poult?

● R. E. Moreng, Colorado State University, Turkey Producer, Vol. 90, No. 3, March, 1959, pp. 4-7.

ABSTRACT

Two experiments were conducted to determine the effect of floor space in pole sheds on the performance of turkeys.

The first study during 1957 compared two pens of toms and two pens of hens when using 3 and 4 sq. ft. floor space per bird. This meant that 50 birds were used per pen (one male and one female pen) when 4 sq. ft. floor space per bird was used, and that there were 70 birds per pen when 3 sq. ft. was utilized.

Feed efficiency was improved greatly by using more floor space per bird, as was also, to a lesser extent, average weight and litter condition. The average market weight of birds was 19.6 lb. and 20.4 lb. for males on 3 and 4 sq. ft. floor space, respectively. For the females, the market weight was 13.7 lb. and 14 lb. for those raised with 3 and 4 sq. ft. floor space, respectively.

The feed efficiency was 4.7 for the males and 4.93 for the females when 3 sq. ft. floor space was utilized per bird, while it was 4.1 for males and 4.7 for females when 4 sq. ft. was used.

In 1958, a second trial was conducted using a commercial strain of turkeys (breed not stated) to test 2, 3, and 4 sq. ft. floor space per bird for hens and 3, 4, and 5 sq. ft. per bird for toms. Each pen contained 576 sq. ft. and the number of birds was adjusted to conform to the floor space requirements after 15 weeks of age.

Hy-Flo Drag-Type CONVEYOR

operates within a standard Screw Conveyor Trough. Handles Grain, Flour, Chemicals, Coffee, Starch, Aggregates and many other free-flowing materials.

Simple, dust-tight, self-cleaning, compact, fast, economical, long lasting, easy to maintain.

Write for Bulletin HF-958

SCREW CONVEYOR CORPORATION
734 HOFFMAN ST., HAMMOND, IND. • WINONA, MISS. • SANTA CLARA, CAL.

Until 15 weeks of age, all birds were raised under similar conditions. All birds were weighed at 15 and 20 weeks of age and at market age. Feeder space was held constant at 2 in. per bird, while water space was held constant at 1 in. per bird throughout the study. Hens were marketed at 23 weeks of age and toms were marketed at 25 weeks of age.

Results of the study were as follows:

Sq. ft. floor space per bird	Sex	Av. market weight	Feed eff. 15 weeks to market	%-A market grade
		lb.		
2	F	13.7	6.28	93.9
3	F	14.8	5.93	90.9
4	F	15.1	5.94	96.4
3	M	21.6	6.79	66.0
4	M	22.2	6.38	79.0
5	M	22.8	6.63	85.1

Litter also tended to become drier with increasing floor space per bird. No difference in mortality was observed between the various treatments.

COMMENT

Relatively little has been done about the floor space problem with turkeys in pole sheds by workers to date. Ohio (1956) conducted some work with small type turkey poults in which the floor space allotment of 3.2 sq. ft. per bird was compared with one of 5.5 sq. ft. per bird, together with a feeder space of either 1.6 or 3.2 linear inches per bird. In this work the birds were raised from 8 weeks to 24 weeks of age on the respective allotments, as compared to the current Colorado work when all birds were treated alike until 15 weeks of age. In the Ohio work no significant differences were observed between the various groups with respect to weight, gain or feed conversion in either phase of the experiment (Previously, brooding floor space areas of either 1 or 2 sq. ft. per bird, and feeder space of 1 or 3 in. per poult were tested up to eight weeks of age).

In a later trial (1957), Ohio workers had essentially the same results using the same breed of turkey, except that the females raised on 2 sq. ft. per bird during the 8-16-week period weighed more than females raised with 3 sq. ft. allowed per bird. The Ohio researchers also pointed out that in their opinion when using the small white breed of turkey, feeder space was more critical with males than it was for females.

The Colorado workers said the critical time to allow sufficient floor space is from 20 weeks to market—and this certainly seems sound from a theoretical standpoint.

For what it is worth—but not backed up by college research as yet—some commercial growers of turkeys after much experimentation on their own part are recommending approximately 5-5½ sq. ft. per bird for females and 5½-6 sq. ft. for males, confined to pole houses when either heavy white or bronze breeds are used.

Certainly, breed used, floor space allowed, feeder space and watering facilities all have very important interrelationships with each other and further research on these very basic management factors with turkeys is indicated. Often these subjects are relatively unglamorous, but in terms of pay-off to the industry and the

Be sure of top-quality urea

DU PONT

Available within trucking distance of your plant

Agricultural Services, Inc.
402 Flour Exchange Bldg.
Minneapolis, Minn.

Arch Sales Co.
P.O. Box 9001
Stockyards Station
Denver 16, Colo.

Bartels and Shores Chemical Co.
1400 St. Louis Avenue
Kansas City 7, Mo.
700 East 17th St.
Wichita, Kansas

Carroll Swanson Sales Co.
2215 Forest Ave.
Des Moines 11, Iowa

Davis Enterprises, Inc.
919 S. Perry St.,
Dayton 1, Ohio

R. D. Erwin Co.
738 Third National Bank Bldg.
Nashville 3, Tenn.

Good-Life Chemical, Inc.
301 South First St.
Effingham, Ill.

Grandone, Inc.
Needham 92, Mass.

Harris-Crane, Inc.
221 S. Church St.
Charlotte, N.C.

La Budde Feed & Grain Co.
741 N. Milwaukee St.
Milwaukee 2, Wisc.

P. R. Markley of New Jersey, Inc.
7300 Crescent Blvd.,
Pennsauken, N. J.

practical flock owner, they may be more important than some of the highly publicized nutritional discoveries!

●

Timely and Worth Noting

Milk is Found Useful in Virus Disease Control; W. W. Hare, Mississippi Farm Research, Vol. 22, No. 3, March, 1959, pp. 1, 4. An interesting application of milk is reported in this article. Plants sprayed with milk before being inoculated with tobacco mosaic virus were protected against the virus. There have been no previous reports of a virus plant disease being controlled by any chemical or spray application. The milk spray was found to be effective up to 24 hours after application. It is suggested that this research application should be put into use immediately by persons pulling tobacco mosaic virus susceptible plants (i.e., tobacco, pepper and tomato plants, etc.) dipping their hands periodically in milk. The plants themselves should also be dipped into milk after bundling and before transplanting.

Although this treatment will not cure a plant infected with tobacco mosaic virus nor will it provide lasting protection against contact spread or that by insects, it will reduce the spread by one of the most common means, contact transmission when handling the plants.

This application certainly opens a wide open field, as it indicates that possible chemical control of viruses may not be too far away! A little reminiscing will recall the fact that the entire field of viruses was opened up only a relatively few years ago (1892) by Iwanowski demonstrating tobacco mosaic virus could be passed to healthy plants by sap from diseased plants after it had been passed through porcelain filters to remove all bacteria.

Although animal viruses are usually classed as extremely small in relation to the size of tobacco mosaic virus—the chemical control of such viruses would be a large forward step in mankind's effort to counter disease. Although antibiotics, etc., definitely aid in many viral conditions, it is thought by most that their action is merely to reduce the effects and risks from secondary bacterial invaders after the viruses have set the stage.

N.C. Poultry Meeting Scheduled May 27-28

RALEIGH, N.C.—The program for the annual Poultry Field Days May 27-28 will have a new twist brought about by the increasing importance of poultry to the eastern part of North Carolina.

Dr. E. W. Glazener, head of the poultry science department at North Carolina State College, said May 27 has been set aside as "egg day" when farmers and others interested may bring themselves up to date on the latest techniques of hen flock management, feeding and egg handling.

May 28 will be "poultry meat day" at the agricultural station at Willard in northern Pender County.

Allowing a full day for both egg and poultry meat will enable farmers and interested businessmen to become well acquainted with late developments of research in these fields, Dr. Glazener added.

D. D. Bohnke Promoted

FT. WAYNE, IND. — Donald D. Bohnke has been promoted to assistant manager of the Indianapolis grain operation of Central Soya Co., Inc., Ft. Wayne. He formerly was with the firm's grain operation at Decatur, Ind. In his new position, he will be responsible to Morris Champion, manager of the grain division. Mr. Bohnke joined Central Soya in 1946 as a member of the accounting department, and transferred to the grain division in 1957.

N.D. Compares Metabolizable Energy Of 'Bucks' with Grains

FARGO, N.D. — Studies at North Dakota Agricultural College indicate that, on the basis of metabolizable energy evaluation, "bucks," recleaned screenings, are worth, on the average, about 90%, 82% and 70% as much as heavy oats, millet and corn.

Turkey producers have shown the most interest in "bucks," consisting mainly of wild buckwheat and the several different fractions of wheat, for two primary reasons, according to North Dakota Farm Research, a bimonthly bulletin: Field tests have shown that this feed is a very palatable one for turkeys and the price of "bucks" is usually lower than many of the large or small grains grown in North Dakota and neighboring states. A drawback to the use of this feed material as a whole grain replacer, said the bulletin, is the variability in amounts of the different types of seed that are blended into a composite feed grain.

To study the metabolizable energy of the recleaned screenings, six samples of "bucks" were obtained from turkey producers at various points within the state.

Wild buckwheat percentage in the various samples ranged from 35.3 to 54.5% and, with one exception, the wheat ranged from 39.4 to 53.7%. It was found that an average of approximately 10% of "bucks" is made up of other field crop seed and weed seed. Four samples contained less than 2% flax and two samples contained 3 and 5.4% flax. In general, the amount of pigeon grass was not great, but in two samples it ran as high as 9 and 22%.

Four of the samples had an average of 1,057 metabolizable calories per pound. One sample was low in caloric value due, in part, to high pigeon grass and low wheat content. The remaining sample gave a caloric value approximately 70 calories higher than the average of the four-sample group. "This difference," said the bulletin, "is not explained by the percentage of the different seed fractions. This high value, when compared with other sample values, would tend to indicate that wild buckwheat is high in metabolizable energy. This, however, is not known to be the case."

Crude protein percentages in the six samples were 13.06, 11.50, 12.39, 13.64, 12.88 and 13.21.

POULTRY FIRM BUILDS MILL

DE QUEEN, ARK. — Mountaire, Inc., the former Maplecrest Farms, Inc., with headquarters in Hot Springs, Ark., plans to complete construction of a feed mill here in June. A poultry processing firm, the company is expanding its poultry processing plant and other facilities in De Queen to enter the feed milling business.

JOHN F. YOUNG COMPANY
3270 Southside
Cincinnati 4, Ohio
WAbash 1-1950

We Are Distributors of Du Pont's
TWO-SIXTY-TWO

protein . . . prompt service . . . use

TWO-SIXTY-TWO®
FEED COMPOUND

from your dependable "Two-Sixty-Two" Agent

Ploss & Sheahan
P.O. Box 2654
Memphis 2, Tenn.

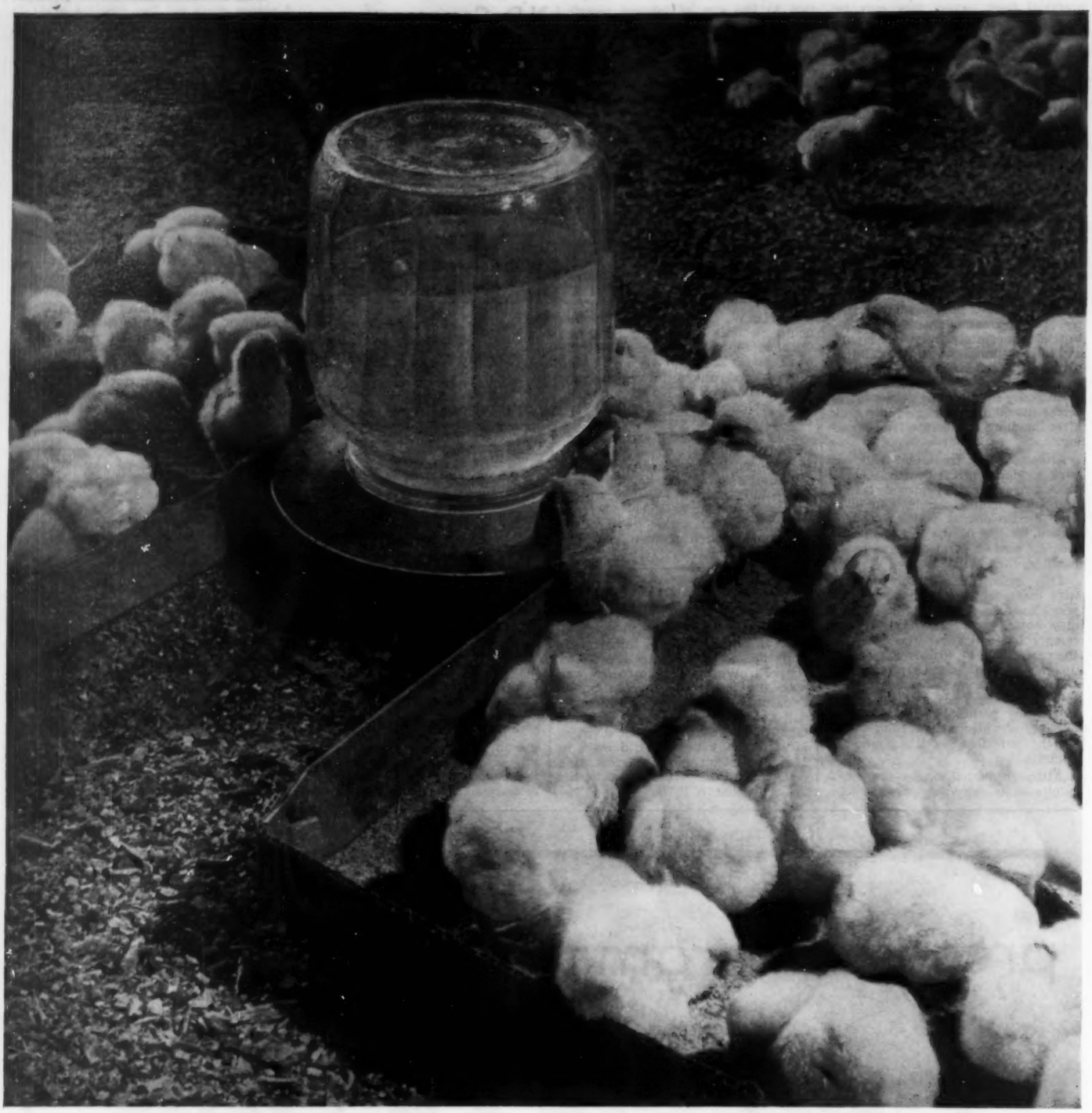
Sunset Feed & Grain Co., Inc.
805 Dun Bldg.,
Buffalo 2, N.Y.

Van Waters & Rogers, Inc.
10216 Denton Rd.
Dallas 9, Texas
620 E. Slauson Ave.
Los Angeles 11, Calif.
3950 N.W. Yeon Avenue
Portland 10, Ore.
650 West 8th South
Salt Lake City 41, Utah
1001 Brannan St.
P.O. Box 3442
San Francisco 19, Calif.
4553 E. 41st St.
Seattle 5, Wash.
North 809 Washington
Spokane 1, Wash.

John F. Young & Co.
3270 Southside Ave.
Cincinnati, Ohio

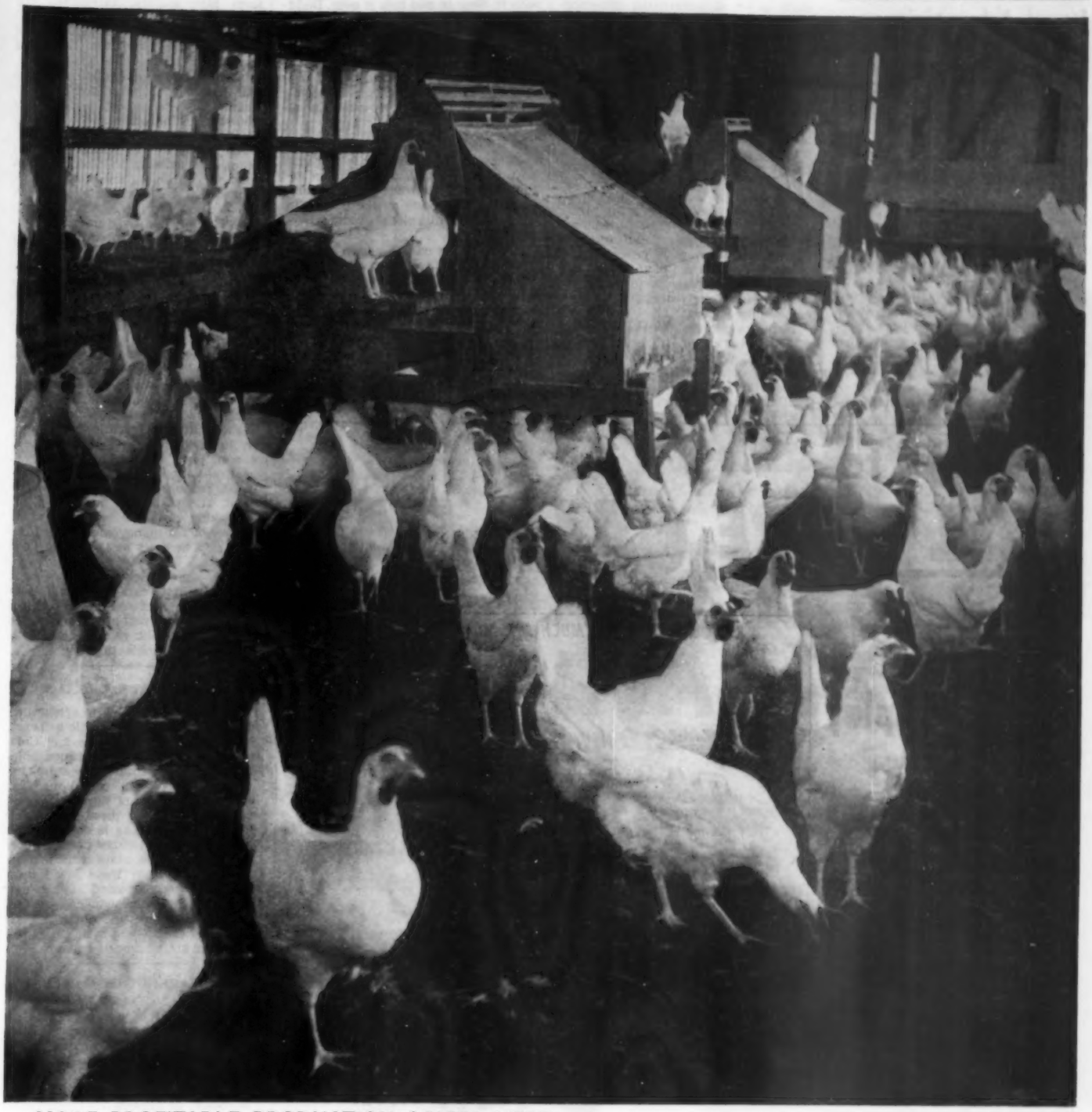
E. I. DU PONT DE NEMOURS & COMPANY (INC.),
POLYCHEMICALS DEPT.
1616 Walnut St., Philadelphia 3, Pa.
•
7250 N. Cicero Ave., Chicago 46, Ill.
•
2930 E. 44 St., Los Angeles 58, Calif.
•
Du Pont of Canada Limited,
P.O. Box 660
Montreal, Quebec, Canada.

DU PONT
REG. U. S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY



WHEN IMMUNITY STARTS HERE...

Offer both coccidiosis protection and natural immunity



MORE PROFITABLE PRODUCTION COMES HERE

Save your customers $15.50 per 1,000 pullets

Replacement flocks raised with minimum coccidiosis losses! Hens in the laying house that have developed natural, lasting immunity! That's the *two-fold* coccidiosis protection you can now offer at the lowest cost your customers have ever known. Incorporate ARZENE* in your feeds.

Here are the facts: ARZENE costs *you* considerably less than any other coccidiostat. And the cost, to your customers, of ARZENE fed for 20 weeks to 1,000 replacement chicks, is *$15.50 less than the average cost of all other coccidiostats.* ARZENE costs them less than 1½¢ per chick.

ARZENE is *strong* enough so that it checks the multiplication of coccidia and helps prevent outbreaks under field conditions. It's *mild* enough so that it does not *completely kill* species of coccidia. Thus, chickens get the mild infections they need to assure the development of immunity.

In addition to its effectiveness and low cost, ARZENE has a wide margin of safety. It can be fed to birds of all ages. It is the *only* coccidiostat considered safe by FDA for feeding to laying hens in production *at the same level* recommended for growing chickens.

Advise your customers to start an economy ARZENE program now with your good feeds. Remember, ARZENE is the *multi-purpose* coccidiostat. You can recommend ARZENE for replacement chicks, for laying hens in production and for broilers! American Cyanamid Company, Agricultural Division, New York 20, New York.

CYANAMID

ARZENE
IN FORMULA FEEDS

*ARZENE is American Cyanamid Company's trademark for arsenosobenzene.

Local Advertising Valuable Tool for Minnesota Firm

By Harold Severson
Feedstuffs Special Writer

Like any man purchasing an established enterprise, Earl (Budd) Hoglund had some ideas for improving the business of the Kasson (Minn.) Elevator Co. when he bought the firm in the spring of 1957.

His ideas weren't particularly unusual, but they were based on a study of the business as it had been operated, on an understanding of the needs and desires of farmers of the area and on a study of a changing agriculture.

Put into practice, these ideas became a sound advertising program using pictures of local people and copy with a strong local flavor. They also became feeder meetings, remodeling, a contract egg program and all-around good public relations.

"We saw the value of a good advertising program," he said. "We have a good weekly newspaper here and we took full advantage of it. Pictures of prominent farmers who will testify to the value of our feeds are helping a great deal."

Mr. Hoglund keeps his copy short and to the point, believing that "there's no point in writing a column of copy when a large picture or two will tell the story more effectively."

He also makes use of the classified advertising section, a department which gets strong readership in most community papers.

Here are two examples of classified ads which ran in a recent issue: "Farmers, what is vertical integration? If you want to make more money for yourself, if you want to continue farming, you must reckon with it. Stop in and talk it over. Budd Hoglund, Kasson Elevator Co."; and "Buying a new corn planter? Give your corn a faster start. Save labor and money. Get the planter with a liquid fertilizer attachment. We are ready to supply you with 5-15-8 complete liquid fertilizer. Kasson Elevator Co."

Contract Egg Program

Currently, Mr. Hoglund is working on a plan to get 30 area farmers established in a contract egg-producing plan. He is working on the project in cooperation with a local produce buyer.

"The project calls for each producer to build a layer house for 10,000 hens," he said. "We'll supply the financing for the building and equipment and will guarantee to have a semi-trailer of eggs for shipment to a Philadelphia market each day."

He points out to farmers of the area that midwest eggs have long been at a disadvantage on eastern markets because of the lack of uniform high quality. Integrated egg programs now being developed will tend to correct this problem through emphasis on quality from beginning to end, he states.

"Contract egg production probably will move into the Midwest faster than other integrated programs," he said. "We think our plan will enable the small farmer to stay in business."

As part of his public relations program, the dealer in Kasson helps sponsor farm programs in cooperation with the county's extension service. A recent example was a Farm-City Forum held at Kasson. A banquet preceded the program, which had as its theme, "Competition Facing Farmers."

Mr. Hoglund recently revamped his office building, installing a larger office for his bookkeeping department and space for consultations with farmers.

"We decided to hold an open house when we finished the remodeling," he said. "We have an excellent flour mill in town—a small one, but it produces some of the finest pancake flour in the country. So we hired two women to make pancakes steadily from 9 a.m. until 5:30 p.m., and served pancakes, sausages and syrup to nearly 500 persons that day in our basement. It was a real success."

Looking over the relatively short history of his management, Mr. Hoglund said he feels he is making good progress.

"We were bucking strong head winds the first year," he admits. "But we're being accepted now. We feel that our advertising program, coupled with sound public relations, really is working out satisfactorily."

Oregon Bars Cattle

SALEM, ORE.—Due to appearance of psoroptic scabies in cattle in Texas, Nebraska, Kansas, Illinois and Colorado, Oregon has quarantined shipments of cattle from those states except under certain conditions. The state department of agriculture will admit cattle from these states only if prescribed dipping is done 10 days before entry and entry permit is obtained from the state veterinarian. Also, cattle from these states may move, if accompanied by official health certificate showing freedom from or exposure to scabies, directly to immediate slaughter in either federally or state inspected plant.

NEW WAREHOUSE COMPLETED

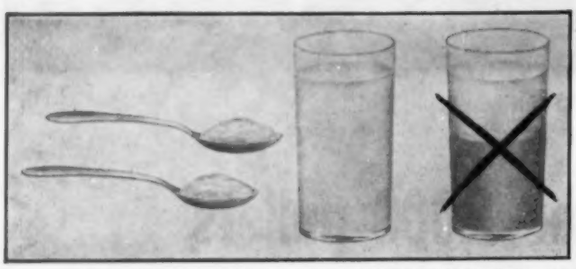
SAN LEANDRO, CAL.—The Poultry Producers of Central California has completed a new warehouse adjoining the recently expanded San Leandro plant in order to stock various farm supplies and other equipment. The building represents an investment of $20,000.

3 Ways to SELL MORE CALF-PAB

1 NEW display shows dairymen how to LOWER FEED COSTS!

ARE YOU PAYING TOO MUCH FOR MILK REPLACERS?
SAVE UP TO 28% PER CALF
GET Blatchford's NEW CALF-PAB
MILK REPLACER fortified with DYNAFAC
55% Milk Solids
Vitamin A-12,000
Vitamin D - 4,000
Vitamin B_{12} and Antibiotics
Plus OTHER Essential Nutrients Your Calves Need!
ASK FOR FREE FEEDING SAMPLE TODAY!

Colorful 30" x 21" weatherproof poster—can be used as outdoor or indoor display to sell more Calf-Pab for you. Mail coupon below!



2 NEW visual suspension test

Prove to yourself how easily Calf-Pab mixes with liquid . . . stays in suspension to assure calves of uniform nutrition throughout the feeding. Notice how little sedimentation . . . to help eliminate nipple clogging.

Simply mix two teaspoonsful of Calf-Pab in 6 oz. glass of warm water. Note the length of time Calf-Pab stays in suspension to assure dairymen their calves will get the full nutritive values of Calf-Pab. Note too, there is no complete separation of fats with Calf-Pab.

3 NEW feeding samples!

Full ONE-DAY feeding samples start new Calf-Pab customers for you . . . assures repeat sales. Mail coupon for samples and other Calf-Pab sales aids today!

Blatchford's ESTABLISHED IN 1900
Main Plant and Offices: Waukegan, Illinois
Midwest Plant: Des Moines, Iowa • West Coast Division: Nampa, Idaho

Blatchford Calf Meal Co.
Waukegan, Ill. Dept. 249
Mail TODAY!

YES! Send me the following new SALES AIDS
☐ New weatherproof "SAVE 28%" Outdoor and Wall display.
☐ New 1-Day free Calf-Pab feeding samples.

NAME_____
FIRM_____
ADDRESS_____
CITY_____ ZONE_____ STATE_____

Cable Address: Parrheim
P&H
GRAIN • FLOUR • FEEDS •
Domestic & Export
PARRISH & HEIMBECKER LIMITED
Export Office — TORONTO, CANADA
WINNIPEG — CALGARY — MONTREAL

Marion MIXERS
ELIMINATE GUESSWORK IN MOLASSES MIXING!

Complete accuracy in Molasses mixing bag after bag!
One mixer For All Your Mixing Needs.
Mixes Both Dry and Molasses Feed.
SEND FOR FREE LITERATURE:
RAPIDS MACHINERY CO.
927 11th Street Marion, Iowa

what new LIPAMONE® findings mean to you.....

- Liponizing cost reduced 60%
- Up to 3% better dress-out
- 16% protein finisher as good as 20%

Reprinted from FEEDSTUFFS *of September 6, 1958*

ESTROGENIC COMPOUNDS FOR CHICKENS

By William K. Warden, Robert K. Ringer, Lester F. Wolterink and Philip J. Schaible
Michigan Agricultural Experiment Station
East Lansing, Mich.

Early tests show that estrogenic compounds increase fat content of muscle tissue.

"In-the-feed" LIPAMONE eliminates cost of handling . . . as well as accompanying stresses and setbacks.

Considerable interest has developed in recent years in the application of hormones for quieting birds and improving the quality of poultry meat. As early as 1939, it was found that estrogen increased the fat content of muscle tissue. With the advent of relatively inexpensive and readily available diethylstilbestrol, more interest in hormone treatment of broilers developed. Lorenz (1943) observed the fattening effect of subcutaneous diethylstilbestrol (DES) implants in three-week-old cockerels. In most cases, workers have obtained no added weight gains from estrogenic treatment nor has feed efficiency been significantly affected.

More recently, it has been shown that dienestrol diacetate (Lipamone), an estrogenic compound, promotes a fattening effect similar to DES. Initially, the oral dose recommended for Lipamone was 1 lb. per ton or 31.75 mg. per pound of feed during the final fattening period. The advantages of feeding the estrogen are that it eliminates the cost of handling the birds necessary with pellet implantation, and the stresses encountered following handling.

Current tests on LIPAMONE are being conducted by (from left) Schaible, Ringer, Warden and Wolterink of Michigan Agricultural Experiment Station.

Dr. Robert K. Ringer, poultry specialist at Michigan State University, weighs birds prior to starting new LIPAMONE experiments.

TABLE 1. Rations, treatments and results at specified intervals.

		Control	Implanted two 15 mg. DES pellets	—Pounds Lipamone per ton— 1	⅓	⅙
% Protein—Calories/lb.	Starter	24-1025	24-1025	24-1025	24-1025	24-1025
	Finisher	16-1025	16-1025	16-1025	16-1025	20-1025
	Fattener	13-1062	13-1062	13-1062	13-1062	16-1025
Number of birds:						
Started at 5 weeks		64	64	64	64	64
Alive at 9 weeks		64	62	62	64	62
Alive at 13½ weeks		64	62	62	64	62
Weight of birds in lb., averages:						
At 5 weeks (both sexes)		1.51	1.51	1.51	1.51	1.51
At 9 weeks (both sexes)		3.06	3.20	3.07	3.19	3.26
At 13½ weeks (both sexes)		5.00	5.18	5.20	5.07	5.20
At 13½ weeks (males only)		5.67	5.84	5.77	5.66	5.85
At 13½ weeks (females only)		4.29	4.46	4.56	4.48	4.58
Feed consumed in pounds:						
Starter 0-5 weeks		123	123	123	123	123
Finisher 6-9 weeks		316	355	329	343	326
Fattener 10-13½ weeks		555	566	577	544	532
From 0-9 weeks		439	478	452	466	449
From 0-13½ weeks		994	1044	1029	1010	981
Feed efficiency:						
From 0-5 weeks		1.92	1.92	1.92	1.92	1.92
From 0-9 weeks		2.06	2.24	2.12	2.11	1.98
From 0-13½ weeks		2.98	3.24	3.00	2.97	2.86

TABLE 2. Abdominal fat deposition in birds treated as specified.

No.	Treatment	—Per cent protein—Cal./lb.— Starter	Finisher	Fattener	—Average abdominal fat— —Males— Grams	% of live wt.	—Females— Grams	% of live wt
1	Control	24-1025	16-1025	13-1062	89.0	3.39	75.1	3.45
2	DES pellets	24-1025	16-1025	13-1062	114.9*	4.37	115.0*	5.42
3	1 lb./ton Lipamone	24-1025	16-1025	13-1062	97.5	3.74	69.1	3.35
4	⅓ lb./ton Lipamone	24-1025	16-1025	13-1062	93.5	3.52	60.6	2.91
5	⅙ lb./ton Lipamone	24-1025	20-1025	16-1025	27.3**	1.03	45.9***	2.20

*Significantly more fat than all other treatments of males.
**Significantly less fat than all other treatments of males.
***Significantly less fat than DES treatment of females.

During 1957-58, an experiment was conducted to establish whether the desirable effects of hormonizing can be obtained with less Lipamone in the feed and whether feeding is as effective as implanting DES. Accordingly, levels of 1 lb., as well as ⅓ lb., of Lipamone per ton of feed were used in the feeding experiment; also broilers fed untreated feed were implanted with two 15 mg. DES pellets; one at the fifth and one at the ninth week of age. In addition, higher-protein finisher and fattener rations were used at the ⅓ lb. per ton Lipamone level.

Four replicated lots of 16 five-week-old, broiler chicks (8 males, 8 females—totaling 64 per treatment) were randomly allotted to floor pens with shavings as litter. The birds had been previously reared in electrically heated batteries with raised wire floors and fed an all-mash, high quality, starter ration containing 24% protein and 1,025 calories of productive energy per pound.

Results of growth, livability and feed utilization for 9-week-old broilers and for birds at roaster market age (13½ weeks) are shown in Table 1.

Since relative fat deposition in market-weight roasters might be an important consideration affecting price, a measurement of abdominal fat including that around the gizzard was made on the dressed carcasses. These results are shown in Table 2. Significant differences between treatments were determined by Duncan's (1955) multiple range test.

Save protein costs — when LIPAMONE is used in broiler feeds at ⅓ lb. per ton, a 16% protein finisher containing 1025 calories per lb. gave 9-week weights nearly equal to 20% finisher containing 1025 calories. (Contact us for full information.)

Better dress-out — abdominal fat in roasters averaged 50-75% less for birds fed LIPAMONE than birds with pellet implants.

Birds produced on 1/3 lb. of LIPAMONE per ton were equivalent to those produced by two pellet implants or by 1 lb. of LIPAMONE per ton.

Why pay meat prices for "waste" abdominal fat?

More ideal carcass—a more marketable carcass results when LIPAMONE at 1/3 lb. per ton is fed with a 20% protein finisher and a 16% fattener.

Although in most instances there was an increase in weights at broiler and roaster ages where Lipamone and DES were given, it would have required many more birds to make the differences statistically significant. Thus the data show that Lipamone, DES or a higher level of protein in the finisher and fattener rations do not significantly affect rate of growth or feed efficiency. The ⅓ lb. of Lipamone was equally as good as the 1 lb. and all hormone treatments were equivalent.

DES implants significantly increased the amount of abdominal fat. Lipamone did not affect the amount of abdominal fat except at the ⅓ lb. per ton level on higher-protein finisher and fattener. In this case the amount of fat was significantly reduced in the males, not as markedly in the females. The effect may be simply due to the decreased C/P ratio rather than to Lipamone. No carcass grades were obtained. However, dressed weights of roasters on the higher and lower protein rations were similar. This suggests that a 20% protein finisher and a 16% fattener would produce a more ideal carcass for the market than the lower levels of protein used in this experiment.

LITERATURE CITED

Duncan, D. B., 1955—Multiple range and multiple F tests; Biometrics, 11:1-43.

Lorenz, F. W., 1943—Fattening cockerels by stilbestrol administration; Poultry Sci., 22:190-191.

At Michigan State University, recent findings substantiate earlier evidence that LIPAMONE is effective at reduced levels (from originally recommended 1 lb. per ton to ⅓ lb. per ton).

when quality is desired—add

LIPAMONE®

to the feed

Reduce throwouts!

New federal inspection rules for poultry are now in effect. Adding LIPAMONE to the feed is a practical approach to desired quality in roasters and broilers. Here is extra finish and bloom that finds a ready market. No stresses or shock due to handling. No "misses," since all birds are treated in the feed. LIPAMONE calms birds . . . picking is no problem.

67% less waste fat

Recommended feeding schedule

Type of Bird	Lbs. LIPAMONE per ton	% Dienestrol diacetate in feed	Feeding period
Broilers	⅓	0.0023	Last 4-6 weeks
Roasters	⅓	0.0023	Last 6-10 weeks
Squab Broilers	1	0.007	Last 3 weeks
Turkey Fryers	1	0.007	Last 3 weeks

For best results, a 60-65 to 1 calorie-protein ratio is advisable.

LIPAMONE for broilers now only 1¢ per bird

LIPAMONE for roasters now only 3¢ per bird

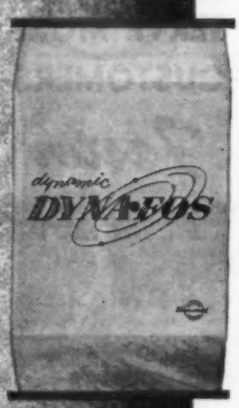
(New lower protein levels now suggested)

Write, wire, phone for more details—

White's

a product of AMERICAN SCIENTIFIC LABORATORIES, Inc., *Madison 1, Wisconsin*

Are you wasting phosphorus by over-fortifying with phosphates of low availability?



THE big difference in quality of phosphorus sources shows up in biological availability. Some sources simply don't supply phosphorus in a form that is readily available to poultry or livestock.

Over-fortification is the only way phosphorus requirements can be met when rations are formulated with these phosphates.

This is shown by a simple, and practical, feeding test* comparing an unprocessed, raw phosphate with International's dicalcium phosphate — Dynamic DYNAFOS.

Previous research had shown Imported Rock phosphate had an average biological value of 70 or less compared to dicalcium phosphate. Therefore, in the test, a practical broiler diet was fed with supplemental phosphorus from Dynamic DYNAFOS supplied at levels equivalent to 70% of the supplemental phosphorus from Imported Rock phosphate.

The table at left illustrates that chicks on Dynamic DYNAFOS showed the same rate of growth and percentage of bone ash as the chicks fed higher levels of Imported Rock phosphate.

The results clearly show that there is no reason to over-fortify rations with phosphates of low availability when Dynamic DYNAFOS meets nutritional needs with fewer pounds of product.

Practical Comparison of Phosphorus Availability

Source of phosphorus	% P	3-wk. wt. (M-F Ave.)	Feed per lb. gain	% bone ash
Imported Rock Phosphate	0.1	297 gms.	1.67 lbs.	35.38
DYNAFOS	0.07	295 "	1.76 "	34.88
Imported Rock Phosphate	0.2	306 gms.	1.58 lbs.	39.40
DYNAFOS	0.14	322 "	1.75 "	39.48
Imported Rock Phosphate	0.4	331 gms.	1.68 lbs.	45.45
DYNAFOS	0.28	334 "	1.60 "	45.15
Imported Rock Phosphate	0.6	323 gms.	1.74 lbs.	46.50
DYNAFOS	0.41	341 "	1.60 "	45.92

*International Minerals & Chemical Corporation, Release: 58-34 (May) available on request.

Dynamic DYNAFOS delivers more available phosphorus in every pound

International's Dynamic DYNAFOS is a chemically processed dicalcium phosphate that delivers proven high biological availability and is low in calcium. That's why each pound of Dynamic DYNAFOS delivers as much usable phosphorus as 2 to 9 pounds of unprocessed, raw phosphates.

You cut formulation costs because you actually need less Dynamic DYNAFOS. And unique beaded form makes handling and mixing better than ever. Write or wire your International representative for details.

International Minerals Chemicals — "Creators of Living Minerals"

FEED INGREDIENTS DEPARTMENT, PHOSPHATE DIVISION

INTERNATIONAL MINERALS & CHEMICAL CORPORATION

Administrative Center: Skokie, Illinois

Sales Agents: EASTERN AREA: GRANDONE, INC., Needham (Mass.); SUNSET FEED & GRAIN CO., INC., Buffalo; P. R. MARKLEY, INC., Philadelphia; A. G. GREENE COMPANY, Charlotte (N. Carolina); EDWARD E. SMITH COMPANY, Atlanta; E. A. CARTER BROKERAGE COMPANY, Tampa. CENTRAL AREA: BULLARD FEED COMPANY, Chicago; GOOD LIFE CHEMICALS, INC., Effingham (Ill); JOHN F. YOUNG COMPANY, Cincinnati; R. D. ERWIN COMPANY, Nashville; CHAS. F. WILLEN CO., INC., Birmingham (Ala.); STANDARD SALES COMPANY, Meridian (Miss.); The VITA PLUS CORPORATION, Madison, (Wis.). MIDWEST AREA: BLOMFIELD-SWANSON, Minneapolis; W. P. MANN SALES CO., Omaha; M. A. McCLELLAND COMPANY, Kansas City (Mo.); B. A. LUCIUS COMPANY, Fort Worth. WEST COAST: JAMES FARRELL & COMPANY, Seattle; JAMES FARRELL & COMPANY, Compton, (Calif.). CANADA: N. D. HOGG LTD., Toronto.

8-59

NBC President Believes Broiler Industry Wants To Do 'Real Sales Job'

RICHMOND, VA. — Don Corbett, Waterville, Maine, new president of the National Broiler Council, remarked recently that two developments have convinced him "that the people in the broiler industry really mean business about selling."

The first reason for this conviction, he said, is the continued growth of National Broiler Council support, and the second, "actions taken and the general feeling of the people" at the council's conference in Dallas.

Mr. Corbett reported that the broiler council's income from its feed, hatchery and processor finance plans hit $72,755.07 during the first quarter of this year, up 26% over the first quarter of last year when income from this group was $57,542.06.

"When people plow this much more money into selling, with industry conditions like they are, you know they feel their Broiler Council investment is good business," he said.

Referring to the council's Dallas conference, he said, "You knew from talking with the people there that broiler people have faith in their industry and in its ability to solve their problems. And you knew they felt strongly that this industry must do a real selling job to enjoy profits in the future."

Two Promotions

Frank Frazier, executive vice president, said the council was already "geared up for a strong sales effort" the first six months of this year. He reported that two major promotions—"Corn Crisped Chicken" and "Chick-n-Que"—are scheduled for the period, instead of last year's single promotion.

The industry has had a "stop-and-go situation" with the retailers, Mr. Corbett noted, and "work is already under way on a wide scale to get the industry's story across to the food store people." Commented the council president, "We are going full steam ahead on this selling program because we have faith in this industry, too. Plans are jelling for late summer and fall promotions."

"Dynamic Selling Needed"

It was reported that since NBC income is tied to volume levels, the first quarter is traditionally one of the low income quarters. In addition, allied industry investments are second and third quarter income. "The industry needs dynamic selling like it's never needed it before," he said, "and we plan to give it all we've got."

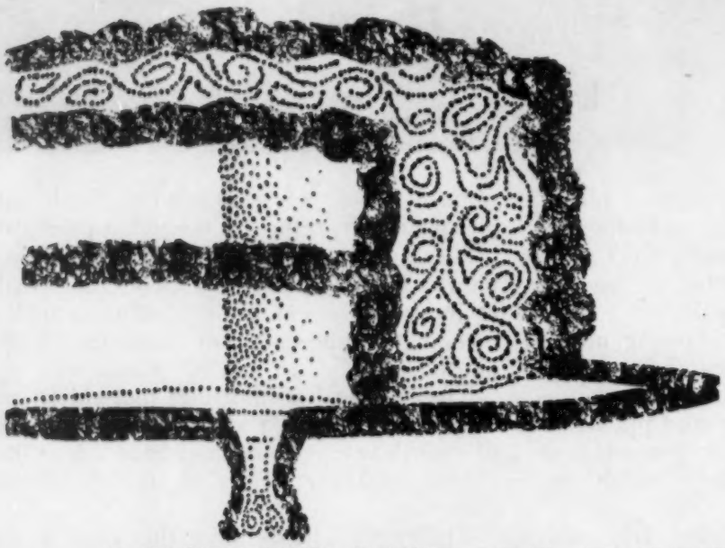
After reviewing the board's actions, Mr. Corbett said broiler council selling will go forward in three fields:

"First off, we've got to sell the members of this industry on producing broilers for a market, rather than producing broilers and hoping to market them.

"Second, we've got to sell food retailers on using merchandising and pricing practices that will afford their industry, as well as ours, a better chance at profits.

"And third, we've got to sell the consumer on ideas for the use of broilers rather than on price. We've got to sell her on the value of our product, and I'm convinced we can do it."

SQUARE TANKS—The feed division of the Dairy Cooperative Assn., Portland, Ore., has installed a square bolted tank for dispensing bulk feeds. In reality there are four tanks, two of which are divided in halves, and two are subdivided into quarters. They are built into a square shape to save space and increase capacity to over 35 tons of feed for each basic unit. The tanks are self cleaning and automatically controlled. The tanks were made by the Butler Manufacturing Co., Kansas City, and installed by Larson & Baardson, Inc., Portland. Specially prepared small loads of medicated feeds can be held in one of the quartered tanks that holds 8 tons without fear of contamination or wasting of space as in the round silo-type tank, officials said.



EASY TO USE AS A CAKE MIX

GORTON'S fish-base BLENDS MAKE THE MOST PROFITABLE FEEDS YOU CAN SELL... FOR BROILERS, LAYERS, TURKEYS, HOGS.

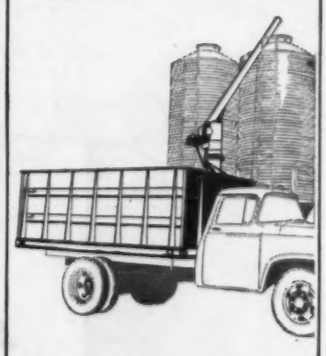
If you're mixing your own brand of feeds, these New Englander products are for you! Ocean-Fresh Redfish meal, solubles from edible fish, and other farm-proven ingredients give them every essential vitamin, the highest quality protein, and a full measure of unknown growth factors — everything your feeds need to boost egg production and hatchability, to produce maximum feed efficiency in broilers, turkeys and hogs. The uniformity and potency of Gorton's Blends are guaranteed. Best of all, one of these great pre-mixes will completely fortify any feed you mix. You save money, to say nothing of mixing time and inventory space. Write us today for the name of our distributor near you . . . ask for our folder on Gorton's Blends.

Also ask about these other New Englander products: New Englander Vitalizer, to help guard dairy cows, beef cattle, and sheep against variations in roughage, Fish Meals, Condensed Fish Solubles, Vitamin Oils, and BHT.

NEW ENGLAND BY-PRODUCTS CORP.
177 Milk Street • Boston 9, Mass. • HUbbard 2-1682

SERVE MORE CUSTOMERS *Faster*

WITH THIS NEW LIGHT WEIGHT SIMONSEN HIGH DELIVERY BULK & SACK FEED BODY



You'll be way out in front with this attractive new Simonsen High Delivery Combination Body on your truck. It's all steel, light weight — hauls more payload. Hauls bulk and sacks on the same trip — cuts delivery costs. Completely hydraulic, with fast front end delivery at 600 lbs. per minute and reaches 21 feet up. Order the size and compartment arrangement you need. Write now for full details on this custom built body by the number one name in bulk feed delivery equipment.

S

SIMONSEN MANUFACTURING CO.
Dept. FS QUIMBY, IOWA

Here's What Dealers Say About Wirthmore Feeds

Tonnage Doubled In One Year With Wirthmore

With a complete line of Wirthmore Feeds and Concentrates to offer, Ward Livingood finds it practical and profitable to handle Wirthmore exclusively.

Friendsville Milling Co.
Friendsville, Maryland

In the year I've been handling Wirthmore Feeds, I have received more consideration and service than during the previous five years when I handled three other lines of feed.

With Wirthmore alone, I am able to serve my customers as well or better than I could with the three other lines. I also avoided additional inconvenience and investment plus three separate inventories.

In one year my tonnage has doubled with Wirthmore.

Ward Livingood

Store Traffic Increased Many Times

Norfolk County
Feed and Seed Store
Portsmouth, Virginia

I consider my Wirthmore dealership a very valuable asset to my business. Since joining Wirthmore, my store traffic has increased many times thereby enabling me to move a good deal more of my allied lines such as seeds, paints and garden supplies.

By expanding our floor space a great deal, we hope to grow right along with a quality product such as Wirthmore.

John T Heath

Likes Wirthmore Quality, Service, Sales and Advertising

Raymond S. Capron, Brooklyn, Pa.

I have found service from Wirthmore plants to be excellent — prompt, efficient and courteous.

Feeds have always reached my place of business in the best of condition, fresh and palatable. This makes repeat business easy to get.

Quality of feed is tops in the field.

Field service of Wirthmore leaves nothing to be desired. I have never had anything like it before!

Wirthmore cannot be topped in sales and advertising support.

The Wirthmore sales and servicemen have been an invaluable help to me in giving me tips on business management, merchandising and trade trends.

Raymond S Capron

Changing to Wirthmore Was The Best Thing We Ever Did

Cortland County Feed
Cortland, New York

Best thing we ever did was to change to Wirthmore three years ago.

We think they are nice people to do business with and our customers like the feed and Wirthmore service.

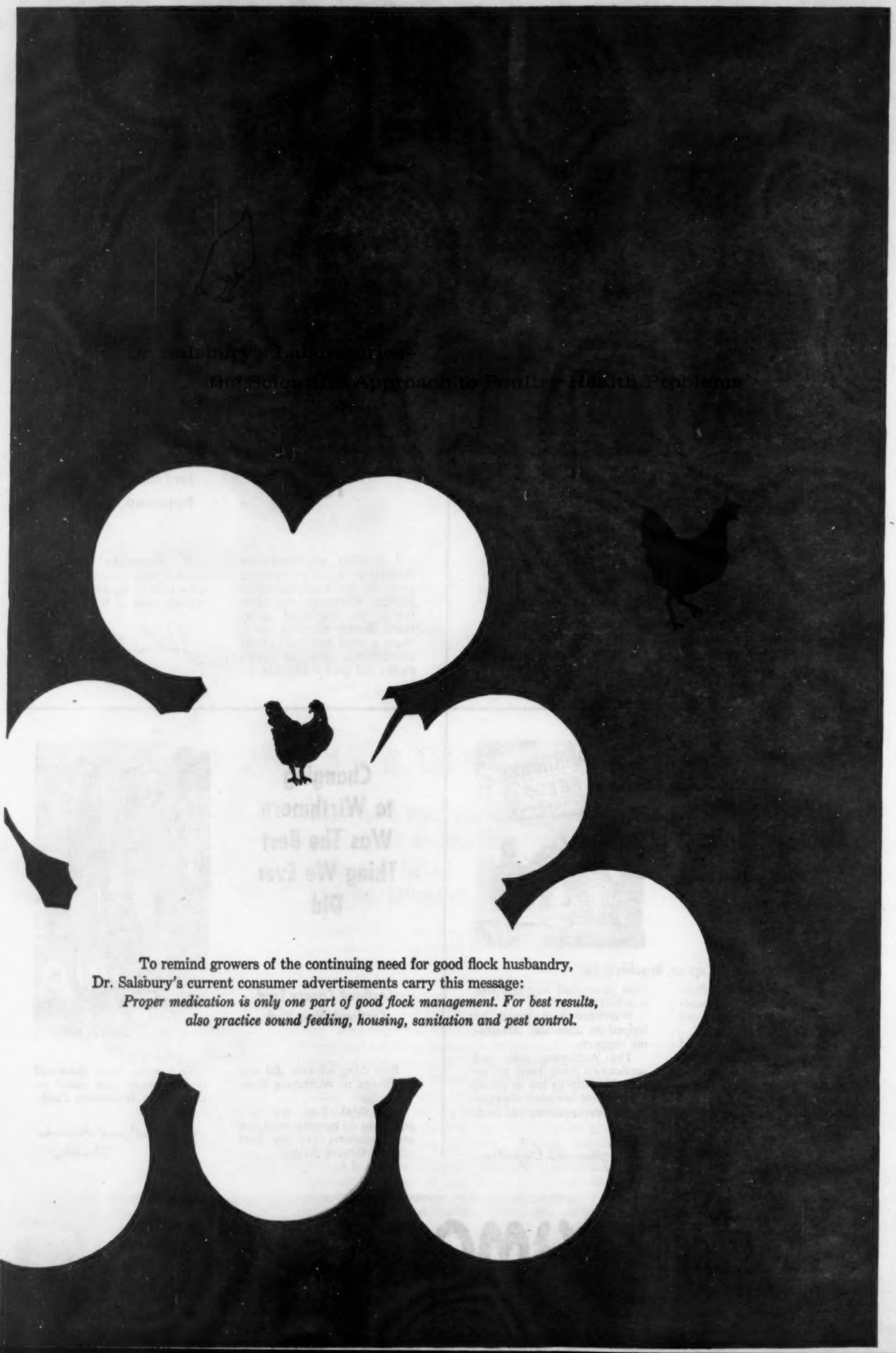
Our sales have increased steadily each year since we changed to Wirthmore Feeds.

Sherwood and Winnie Butler

WIRTHMORE®

Home Office:
- Waltham, Mass.

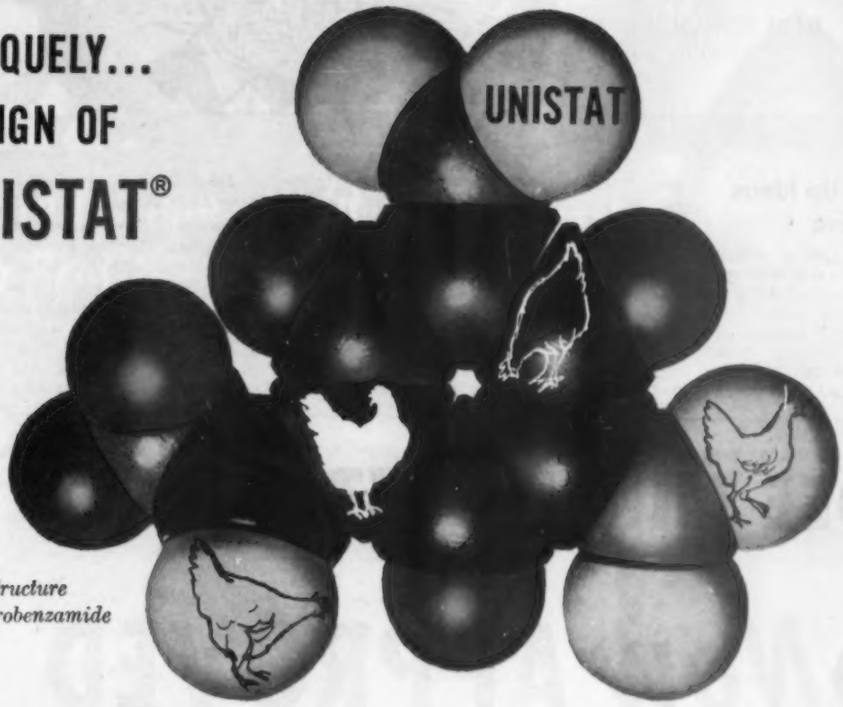
Mills at:
- Olean, N. Y.
- Toledo, Ohio
- Brattleboro, Vt.
- St. Albans, Vt.
- Concord, N. H.
- Bridgewater, Mass.
- Preston, Md.
- Hickory, N. C.



To remind growers of the continuing need for good flock husbandry, Dr. Salsbury's current consumer advertisements carry this message:

Proper medication is only one part of good flock management. For best results, also practice sound feeding, housing, sanitation and pest control.

UNIQUELY...
THE SIGN OF
UNISTAT®



Molecular structure of 3,5-Dinitrobenzamide

More Than Just A Superior Coccidiostat ...Unistat Has The Profitable "Extras"!

The molecular structure above is that of 3,5-Dinitrobenzamide—the organic compound that helps in making UNISTAT so highly effective against the major species of coccidia.

However, UNISTAT's formula also includes Acetyl-(para-nitrophenyl)-sulfanilamide to promote broad-spectrum coccidiosis prevention, and 3-Nitro-4-hydroxyphenylarsonic acid for *growth stimulation, increased feed efficiency,* and *improved pigmentation*—the profitable extras in poultry production.

There are many coccidiostats available today. However, few offer you the profit-making extras. This is the reason Dr. Salsbury's UNISTAT is rapidly becoming *the number one coccidiostat in America.* Smart poultrymen know these extras pay off in cash returns.

By blending small amounts of UNISTAT in your feeds, you're offering your customers low-cost protection against coccidiosis . . . PLUS . . . you're adding those sought-after extras to your feeds. You're creating good will and confidence among your customers . . . another unseen ingredient every successful business needs.

Cash in on this growing demand for UNISTAT. Write, wire or phone for more detailed information . . . or, place your order today.

Dr. SALSBURY'S LABORATORIES
Charles City Iowa

NATIONWIDE SERVICE TO THE POULTRY INDUSTRY

JOE BROOKS

BY AL P. NELSON

You Can Pick Up Ideas Anywhere

Joe Brooks was engaged in a task odious to most men. He was with his wife on a shopping tour, and she was looking for a new spring coat.

Joe and his wife had started on this tour in Hansen's Creek, where Joe, of course, had his thriving feed mill and farm store, and from which came the wherewithal which was to pay for Mary's new spring coat. The feed dealer and his wife had visited the one department store and three dress shops in the small city, and true to her sex Mary had not found the coat which she wanted. She had found several she liked, but none that she liked well enough to buy.

So on a day when it looked as if most farmers would stay home, Joe had driven Mary—at her insistence—to the city, 125 miles away. Purpose—to visit some dress shops.

Hilda Anderson, a Swedish woman who often worked for the Brooks, was engaged to stay with the twins, cook and care for them, and if Joe and Mary did not get back until the next day to "hold the fort" if she could.

"Joe," said an apparition in a light purple coat mincing up to him in a Milwaukee dress shop, "how do you like this?"

The feed dealer looked up in astonishment. For a moment he did not recognize the woman who stood before him. Then he blinked. "Oh, Mary . . . "

Mary smiled. "It's kind of cute, isn't it?" The sales lady wisely stood about two yards away, watchfully waiting. She knew husbands and wives wanted private confabs on new coats.

"You like that?" Joe asked in a horrified voice. "Don't expect me to walk down the street with you back home—in that."

Mary bristled. "Well, you said I could pick what I want."

"I did. This is the first one I don't like. That color! Whooh!"

Mary walked back to the waiting saleslady. "My husband doesn't like it," she said.

The tall, fashionably dressed saleslady smiled. "I know how it is, dear. Well, how about this light green one?"

Three hours and seven dress shops later, Mary was still trying on coats and had not yet found the one which was just right in her opinion. Joe had resorted to reading the Reader's Digest which he had bought as insurance, so he didn't mind the passage of time so much.

Suddenly, he shifted his crossed legs, gripped the Reader's Digest tighter, just as Mary came up wearing her old coat.

"I'm so discouraged, Joe," she said. "I just can't find the coat I want."

Ready for Dinner

Joe jumped to his feet. "Say, I'm ready to quit, too. Let's go get a big steak dinner, maybe at that old German restaurant. I've got a business idea from reading Reader's Digest and I wanna talk about it."

So they went to the colorful restaurant and Mary blinked as Joe ordered manhattans for both of them and $4.50 steaks.

"Joe, what happened to you?" she asked in a dazed voice.

The feed dealer chuckled. "We got to have real food to fathom this idea, honey. This Reader's Digest is quite a magazine, isn't it? It digests all the important articles, condenses them and reprints them in handy readable form."

"Yes," agreed Mary matter of factly, "but how does that affect your feed business?"

Joe chuckled. "In this way; I get about ten national and regional farm magazines every month, and farmers get some of those magazines, too. But the articles cover a variety of subjects and by the time a farmer thumbs through them, he may have forgotten some of the vital things he read."

"So?"

Joe beamed and he looked far from

BO-DEE MINERAL STABLE D2

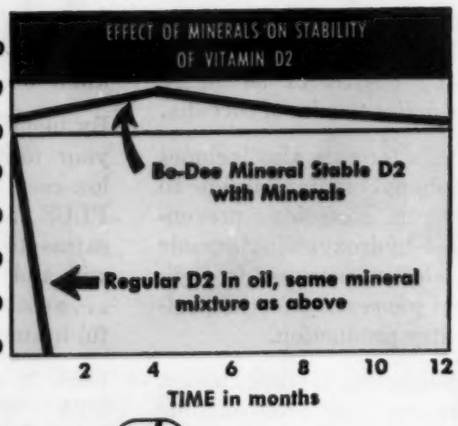
WISCONSIN ALUMNI RESEARCH FOUNDATION
Approved for VITAMIN D upon periodic tests

Now APPROVED

For 12 months stability in the presence of these listed minerals by

WISCONSIN ALUMNI RESEARCH FOUNDATION

Note: MINERAL STABLE D2 fully present at the end of 12 months. Ordinary D2 practically gone in 30 days.



Ground Limestone	41.23%	Ferrous sulfate	0.50%
Steamed bonemeal	15.00	Copper sulfate	0.15
Tricalcium phosphate	13.00	Manganese sulfate	0.10
Magnesium sulfate	10.00	Cobalt sulfate	0.02
Iodized sodium chloride	20.00%		

This is a product of N. V. PHILIPS-ROXANE, The Netherlands
The world's largest manufacturer of Vitamin D

Sold exclusively by

BOWMAN FEED PRODUCTS, INC. Holland, Michigan

13160 Ortley Place, Van Nuys, California • 600 South Michigan, Chicago 5, Illinois

CHARLES BOWMAN & CO., 220 East 42nd St., New York 17, N.Y.

Distributors for NORTH AMERICAN PHILIPS COMPANY, INC.

Send for new low prices and technical bulletin

BOWMAN FEED PRODUCTS, INC., Holland, Michigan

Please send me full information and prices on new MINERAL STABLE VITAMIN D2.

NAME_____

COMPANY_____

ADDRESS_____

ROADSIDE EGG VENDOR
Now Available on Time Payments

Here's an Egg Salesman who never sleeps. Yes, with the "T-LINE" EGG VENDOR you can get retail prices for your eggs which means an extra 10c per dozen profit. It's the way to turn your egg venture into a profit maker . . . if you are located on a well traveled highway near town or know of a good spot such as a gas station, large apartment building, parking lot, etc. The "T-LINE" EGG VENDOR is a proven unit. Fully automatic refrigeration and high humidity. Holds 112 dozen eggs in vending position plus refrigerated storage for an additional 120 dozen eggs. Write today for literature and time payment plan to TOBIAS ENTERPRISES, 326 North Michigan Avenue, Chicago 1, Illinois.

The 4 Stages of Praternautics

BLUE STREAK

Accelerate Income • Hold Down Costs
Broaden Profits

STAGE FOUR

The happy, well-served customer leaving the MILL with his payload of Custom Feed — determined to orbit his way back to his favorite Feed Mill just as soon as his needs require.

THE PAYLOAD A HAPPY CUSTOMER

These Blue Streak PAYLOAD ASSEMBLIES BOOST the Miller's Business Up the PROFIT ORBIT

STAGE THREE

Broadens the Profit Dimension — triggered by TWIN-SPIRAL MIXERS.

FAST EFFICIENT TWIN-SPIRAL MIXING with PROPER Supplements

Have a PRATERNAUTICS SPACE-N-TIME ENGINEER call on you with a complete Package Feed Mill kit and blue prints. Write, wire or phone *today!*

SEE PRATER SPACE-N-TIME ENGINEERS AT THE NATIONAL FEED SHOW BOOTHS [illegible]

STAGE TWO

Powered by ADVANCED PAYLOAD ASSEMBLIES.

HIGH VOLUME Triple Reduction Granular Grinding

STAGE ONE

FIRST STEP IN STOPPING FLIGHT OF PROFITS — an expertly designed launching site.

SPEEDY, EASY RECEIPT OF GRAIN

BLUE STREAK Prater

PRATER PULVERIZER COMPANY
1537 South 55th Court • Chicago 50, Illinois

the tired, harassed business man that he sometimes was. "Mary, I don't know why I didn't think of this before. For instance, I could clip all those articles in my farm magazines every month and paste them classified into a big scrapbook for my customers."

"I don't quite get it."

"Like this," Joe said. "On several succeeding pages I would clip and paste in all the articles appearing on feeds. My feed division would include articles and news items about integration, antibiotics in feed, pellets, and so on."

Mary looked puzzled. "Are you sure visiting all those dress shops with me hasn't made you dizzy?"

"It should," Joe admitted, sampling his steak. "But it hasn't. Look, I'd have a farm reference paste up scrapbook like this for every month of the year. Bill Jones, a farmer who raises poultry, is interested in poultry feed. He could come to our store, sit down with our April Scrapbook, turn to the feed section and read in it every important article published in the farm magazines that month."

Mary's pretty blue eyes opened wide. "You mean that if Bill Jones wanted to keep up with newest developments in feeding, all he'd have to do is come to our mill and sit and read them in our monthly scrapbook?"

Joe nodded. "Sure, a handy, easy-to-read setup. No thumbing through magazines. We'd have good feed coverage. He may have read some of these articles in his own farm magazines, but maybe they got misplaced. Well, we've got the complete set, plus 90% of the feed articles published in papers the average farmer doesn't subscribe to."

"Would you cover only feeds?," Mary asked.

Cover All Phases

Joe shook his head. "No, I would have a section of the latest article on all types of fertilizer and application. Another section would be devoted to raising broilers, one for layers, one for raising turkeys, one for raising hogs, beef cattle, sheep, and so on. In other words just about any phase of farming that a customer is interested in, he can find in a compact, monthly scrapbook at my store. It should attract more traffic and boost our sales considerably. And win new customers on feed."

Mary laughed. "I do think it a good idea, now that you've explained it, Joe. And I'll help you make up that scrapbook every month. I love to clip and paste. But is one book enough?"

"Wait a minute. One is enough to start with. If the book proves so popular that farmers wear it out every month, I may make up another. All it means is buying or subscribing to another list of farm magazines."

"And you don't have to pay authors for reprint rights, either, do you?"

Joe shook his head. "I certainly don't think so. All I'm gonna do is clip published articles and paste them in a scrap book."

Mary's eyes glowed with admiration. "Just think," she said, "if you hadn't gone shopping with me, you wouldn't have gotten this good idea."

"That's right," said Joe. "Well, I always try to utilize my time when I get stuck somewhere."

Mary's face clouded. "Joe," she said, "you know, I think that light blue coat I tried on at the Leader Department Store in Hansen's Creek is the best coat, after all. I'll buy it when we get home."

Joe almost dropped his coffee cup. "Oh no!" he cried. "You mean we took this long trip and tramped around to 10 dress shops all for nothing—and now you go back and buy just about the first coat you tried on—in our own town?"

Mary nodded brightly. "I'm satisfied now that I've seen all the others. And don't forget, you got an idea coming here."

Joe nodded a little gloomily. "Yeah, I did, didn't I? Well, I guess a fellow have to travel around a little to work up ideas. But I sure never thought I'd get a business idea out of a shopping trip like this. Waiter, check please."

Canada Hog Numbers Up 29% Over 1958

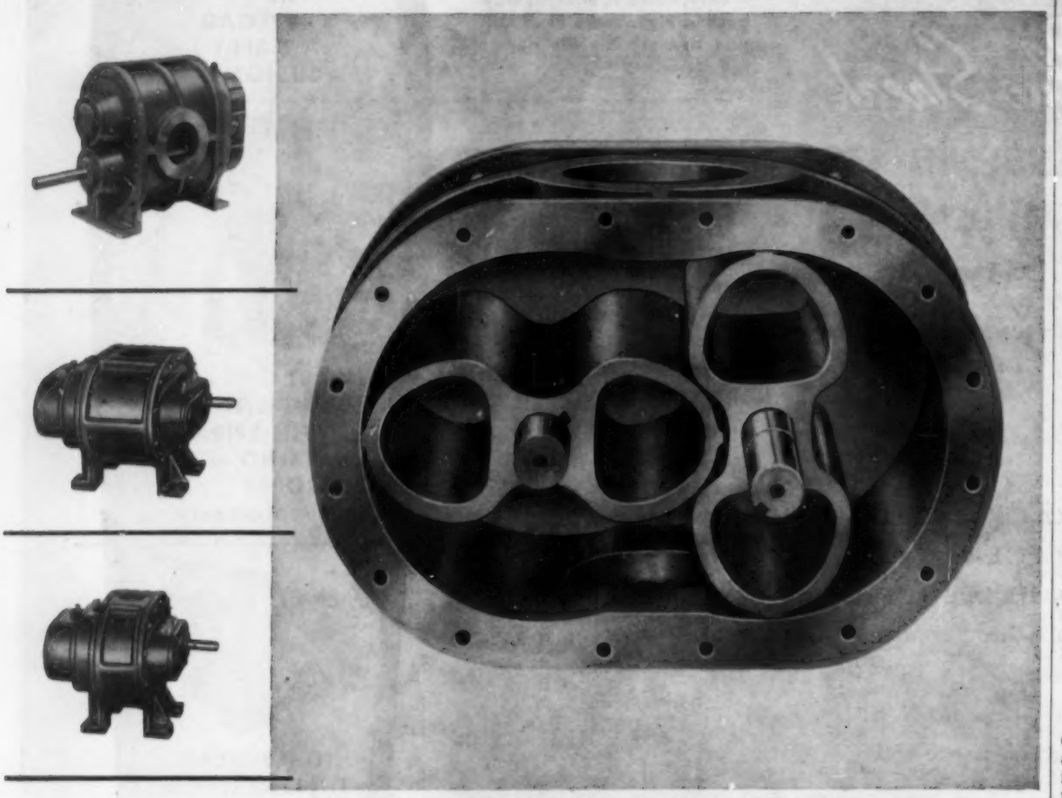
WINNIPEG—Number of hogs on Canadian farms at March 1 this year was estimated at 6,343,000, up 29% from a year earlier, with 3,463,000 being on eastern-Canada farms (31% greater than last year) and 2,880,000 on western-Canada farms (up 27%).

Number of winter litters (farrowings from Dec. 1 to Feb. 28) increased 32% to 282,700 head from 214,800 a year ago, farrowings in the East rising 45% and in the West 13%. Prospects are for an increase of 16% in March-May farrowings to 475,800 head from 408,800. Gains are expected in all provinces, with the greater rise being indicated for eastern farms.

At Dec. 7, 1958, the bureau of statistics had estimated that December-May farrowings would increase 23% compared to a year earlier, but the March survey results indicated a gain of 22%. The December estimate of a 36% rise in the East has declined slightly to 33%, while what had appeared to be an 8% gain in the West is now estimated at 10%.

NEW FEED COMPANY

MARSHALLTOWN, IOWA — General Distributing, Inc., a feed, seed and grain firm, has filed articles of incorporation at Marshalltown. Alfred Rainey is president and treasurer of the company, and Leland Wiseman, Conrad, Iowa, is vice president. The business is to be located at 1501 Norris Place.



Sutorbilt blowers deliver air or gas at capacities up to 20,000 cubic feet per minute and pressures or vacuums up to 10 pounds. Design incorporates two figure-eight impellers which rotate in opposite direction and deliver a metered volume of air or gas.

SUTORBILT BLOWERS ASSURE TOP PERFORMANCE AND DEPENDABILITY

You want peak performance . . . from a blower that needs no special attention. Sutorbilt *ruggedness* gives it to you! Cases, headplates and impellers are of sound, close-grained cast iron. Heavy-duty anti-friction bearings maintain factory clearances throughout long service life. Wide-face herringbone gears, —run in a bath of oil—are engineered to absorb heavy shocks without affecting precise timing of impellers.

These and other Sutorbilt design features —plus highest-quality manufacturing methods—assure maximum, maintenance-free service from Sutorbilt blowers and gas pumps. Write for illustrated brochure giving complete specifications.

Representatives located in principal cities. Consult your classified telephone directory.

Visit Our Booth 172-173 at the National Feed Show, Chicago, May 11, 12, 13.

SUTORBILT IS WELL BUILT

CORPORATION, 2966 East Victoria St. • Compton, Calif.
Subsidiary of Fuller Company, Catasauqua, Pa.

FULLER COMPANY CATASAUQUA, PA. TRADE MARK

ROTARY POSITIVE-PRESSURE BLOWERS AND GAS PUMPS WITH VERTICAL OR HORIZONTAL MOUNTING

1163
8-10

"I like being a Gooch Feed Dealer. Feeding improvements are coming fast and Gooch has 'em for me as soon as they are proved sound."

GOOCH'S BEST

Lincoln, Neb. Salina, Kan.
Vicksburg, Miss. Dalhart, Tex.
Council Bluffs, Iowa

How can I improve my formula feeds without increasing my costs?

IT'S EASY WHEN YOU USE MORTON TRACE-MINERALIZED MIXING SALT. It costs no more, yet it contains trace minerals with proven greater nutritional availability—particularly the manganese and iodine required by poultry.

Both these elements in Morton Trace-Mineralized Mixing Salt come from compounds Armour Research Foundation has evaluated and shown to be the most readily utilized by poultry. (Manganese, of course, is necessary to control costly perosis or "slipped tendon" and iodine regulates thyroid activity.)

Poultry feed mixers who use Morton Iodized Mixing Salt get the proven nutritional availability of Cuprous Iodide, a proven superior source of iodine (patented for use by Morton Salt Company; pat. No. 2,772,167) that remains stable from mill to feed bunk, even in pelletized feeds. You can get all Morton Mixing Salts anywhere in the United States.

Mail coupon today for more information!
MORTON SALT CO., Dept. F-418 4
110 No. Wacker Drive
Chicago 6, Illinois

*Name*_____

*Company*_____

*Address*_____

*City*_____

*County*_____ *State*_____

Morton mixing salts

Trace Mineralized—Iodized—Special

Feed Service BULLETIN BOARD

IDEAS TO HELP YOUR CUSTOMERS

TGE Disease in Swine

Since no effective treatment has been found, swine producers must depend entirely on sanitation and management prevention of the virus disease called transmissible gastro enteritis (TGE), which causes diarrhea and vomiting.

Dr. E. Crosby Howe, extension animal hygienist, University of Nebraska, suggests that the producer follow these practices for preventing TGE:

1. Do not add more gilts or other swine to the herd near farrowing time. Sows or gilts that go through an outbreak and recover two weeks or more before they farrow, frequently produce litters that have little or no trouble with the disease.

2. Persons handling hogs should change clothing and wear cleaned, disinfected boots when caring for the breeding herd. This practice is particularly important when returning to the farm after visiting another farm, sale or meeting place of farmers.

3. Keep the dog at home. In addition, dogs should be kept away from the hog lot.

4. Do not allow outside persons to enter the hog lot without taking precautions of changing clothes and footwear.

5. Do not allow trucks or other vehicles to enter the hog lot.

Dr. Howe said TGE is a highly contagious disease that affects hogs of all ages. However, it is characterized by 100% mortality in pigs 3-10 days old. Older swine, he said, may not show any signs of TGE virus infection, while some may show vomiting and diarrhea. Young pigs, on the other hand, always have diarrhea, according to Dr. Howe. The discharge may be much like the milk that was ingested or it may be white, yellowish or greenish. Vomiting and excessive thirst are other constant signs of transmissible gastro enteritis.

◆

Egg-Handling Tips

John L. Skinner, extension poultryman at the University of Nebraska—noting that checked, cracked and broken eggs rob many poultrymen of a good share of their profit—listed these things to remember in handling eggs:

—Handle at one time only the number of eggs which can be easily concealed in the hand.

—Fill baskets only one half to two thirds full.

—Hang baskets of eggs. Never set a basket of eggs down on a hard surface.

—Handle eggs as little as possible.

—Gather eggs three to five times daily.

◆

Needle Teeth Clipping

Injury to sows' nipples and mammary glands and infection and possible death of baby pigs may be problems of the swine producer which can be avoided by clipping the needle teeth of the pigs soon after birth.

Drs. I. A. Schipper and D. F. Eveleth, veterinarians at South Dakota Agricultural College, recommend clipping with a well sharpened clipper to prevent breakage and injury to the gum and jaw. Injury from clipping can provide the opening for infection as readily as injuries caused by the needle teeth, they said.

If injury and infection occur because the producer failed to clip the needle teeth of his baby pigs, treatment should begin immediately. Drs. Schipper and Eveleth listed these steps in treatment:

1. Clip the needle teeth.

2. Apply antiseptic to infected areas. (Recommended antiseptics: Rocal, metaphen, 2% solution of iodine, Zepharin or any one of the quaternary ammonium preparations.)

3. Follow-up application of a medicated ointment may be helpful.

4. Injured mammary glands or nipples of sows may require antiseptic cleansing and ointment application. If infection results, consult a veterinarian.

◆

Keeping Eggs Clean

Good laying house management can be the most effective way of reducing egg cleaning problems, say poultry specialists at the University of Minnesota. Their studies have indicated that if the laying flock is managed properly, more than 85% of the eggs should need no cleaning at all.

Here's how they say the flock owner can minimize his egg cleaning problems:

1. Confine the flock to the laying house at all times. Birds with muddy feet will soil many eggs.

2. Keep the litter dry and in good condition. Placing most of the feeders and waterers over dropping pits will reduce litter soiling. Hydrated lime,

WHICH IS THE CARB-O-SEP PEN?

Patent Pending

This pen received Product A—one of the prominent commercial products available for preventing blackhead.
Results at the end of the test period
Mortality due to blackhead 40% % severe liver lesions 45%
% severe cecal lesions 55% Feed conversion 3.29

This pen received Product B—another of the prominent commercial products available for preventing blackhead.
Results at the end of the test period
Mortality due to blackhead 15% % severe liver lesions 15%
% severe cecal lesions 20% Feed conversion 2.88

This Control Pen received no blackhead preventive product
Results at the end of the test period
Mortality due to blackhead 60% % severe liver lesions 60%
% severe cecal lesions 60% Feed conversion 4.16

This pen received CARB-O-SEP.
Results at the end of the test period
Mortality due to blackhead 0 % severe liver lesions 0
% severe cecal lesions 0 Feed conversion 2.35

—Abstracted From Test C-158

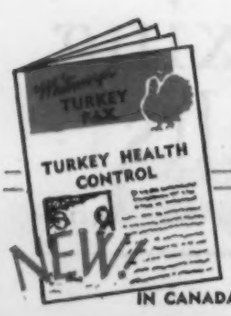
CARB-O-SEP AGAIN PROVES ITS SUPERIOR BLACKHEAD PROTECTION

The birds in each of the above pens are the same age—15 weeks. The same number of birds were started in each pen. They were raised under exactly identical conditions—except for the blackhead preventive used. The pictures and the statistical results convincingly prove the superior efficacy of CARB-O-SEP.

And, in regular commercial use, too, during the tough blackhead season of 1958, CARB-O-SEP-protected birds came through in fine shape . . . without increasing the dosage level over the original recommendations. As one big Virginia grower put it, "We didn't know what blackhead was this year."

PUT "PROVEN BLACKHEAD PROTECTION" IN YOUR TURKEY MASH

For more information, write Dept FS-4



. . . get your free copy. Latest information on health control, management and marketing.

Whitmoyer LABORATORIES, INC.
MYERSTOWN
PENNA., U.S.A.

IN CANADA—WHITMOYER LABORATORIES, LTD., PORT CREDIT (TORONTO TWP.), ONTARIO

KAFIR & MILO
Largest Dealers in Southwest
MID-CONTINENT GRAIN CO.
Board of Trade Victor 9-4671
KANSAS CITY, MO.

at the rate of one half to 1 lb. per 4 sq. ft., will help keep litter dry.

3. Screen off the dropping pits. Use a screened platform around all floor waterers.

4. Provide an adequate number of nests with deep, clean nesting material. One individual nest for each four or five birds is recommended. For community nests, 5-6 sq. ft. for each 100 sq. ft. floor space should be allowed. It's a good idea to brush the wire bottoms each week if roll-away nests or cages are used.

5. Place nests in areas where the litter stays the cleanest and driest. Birds entering the nests will then have a minimum of soil on their feet.

6. Discourage birds from roosting in the nests at night.

7. Gather eggs frequently.

◆

'Look Alike' Diseases

Prompt veterinary diagnosis is the surest way to stop pig losses caused by two diseases that sometimes seem to "look alike," says Dr. Maynard Spear, Iowa State College extension veterinarian. These diseases are "greasy pig" disease and parakeratosis.

The "look alike" problem, Dr. Spears explains, arises because the most noticed symptoms of both diseases are thickening of the skin and excretions that spread over the skin. Treatments are so different that a correct veterinary diagnosis is vital.

Deaths from greasy pig disease vary from 5 to 100% when the disease gets into a litter of pigs from five days to five weeks old. Parakeratosis most frequently attacks pigs 10-12 weeks old.

Best treatment for greasy pig disease, which occurs most often in the spring season, is sanitation and segregation of affected litters, Dr. Spears says. Some favorable results have been reported when the pig's skin was washed with milk solutions of "pinocresol" or quaternary ammonia compounds.

Parakeratosis, which occurs most often in fall and winter seasons, seems to be caused by insufficient zinc in the rations. Pigs usually recover, Dr. Spears notes, when they're placed on good legume pasture or are given 0.9 lb. zinc sulphate or 0.4 lb. zinc carbonate per ton of ration. "Many never get back to their normal growth rate," he says. "It's best to prevent the disease by being sure there's enough zinc in the regular ration."

The first symptoms of parakeratosis are pimples or pus pockets on the skin of the pig's legs, groin, ears, eyelids, shoulders and thighs. Later the skin is covered by exudate and hangs in folds. Sometimes the infected pig vomits and scours, and sometimes has difficulty eating because of ulcers in its cheeks.

On the other hand, the first symptoms of greasy pig disease, Dr. Spears says, are listlessness, drooping ears and tail and a dull hair coat. By the second or third day the pig's attitudes may vary from dejection to anxiety. It gets thirsty and seems short of breath. The skin gets thick, damp and oily, and the entire body is covered by the greasy exudate, which dries on the skin in scabs or crusts.

CITRUS BY-PRODUCTS

Citrus pulp for cattle is made from the peel, rag and seed of citrus fruits.

J. F. Leahy, Kansas City Grain Man, Dies

KANSAS CITY—J. F. Leahy, 72, long prominent in the grain business in Kansas City, died unexpectedly April 1. He was stricken with a heart attack at his office and died shortly afterward.

Mr. Leahy had been a partner in the Clay-Leahy Grain Co., one of the oldest commission firms in the Kansas City market, until the partners dissolved the firm in 1950. He and his partner, Frank B. Clay, retained membership in the Kansas City Board of Trade and retained their offices in the building.

Mr. Leahy entered the grain business in Kansas City in 1916, starting with the E. E. Roahen Grain Co. Two years later he joined the Clay Grain Co. in which he became a partner two years after.

Surviving are his wife, two brothers and a sister.

Chalk Up More Profit
Selling the "POPULAR"
CALF STARTER

Ryde's Cream Calf Meal
FOR GRUEL FEEDING

Ryde's Cream Calf Pellets
FOR FEEDING DRY

This proven calf starter has successfully REPLACED MILK in calf-raising for 47 years. Fortified in Antibiotics and all essential vitamins. Cuts your customers' calf-feeding costs about one half!

SOLD ONLY BY RELIABLE DEALERS

RYDE & CO. 3939 S. Union Ave. Chicago 9, Illinois

HIGHEST PAYLOADS PER CUBIC FOOT
FMC BULK FEED SYSTEMS
NOW AVAILABLE FROM HOOPESTON, ILLINOIS

Knife-action sliding gates provide easy, accurate metering or full cutoff of feed flow.

EXCLUSIVE tank-top and ground-level gate controls give fast, easy operation.

Fastest unload rate available (*up to a ton a minute*) often enables scheduling extra deliveries.

EXCLUSIVE chain and paddle conveyor system handles pelleted feeds with virtually no damage—gives your customers the pellets they paid for.

Complete operation accomplished by use of simple, inexpensive power take-off on truck transmission.

Tank compartments carefully sized for delivery requirements of your specific operation; suggested truck specifications worked out to assure maximum payloads.

FMC's *all-mechanical* design is easy to operate and maintain—simplifies operating parts and keeps your time and labor costs to a minimum.

Torque limiter automatically protects against overloading of conveyor system.

Low center of gravity and plenty of clearance with *all* loading bins.

Oversize leak-proof *sliding door* hatches for fast and easy loading.

Slip-proof expanded metal catwalks for maximum operator safety in all weather.

Maximum-duty design provides *wide sack decks* running full length of tank on both sides; will carry up to 1,400 pounds of sacked material.

The FMC Bulk Transport System, with its light, rugged aluminum construction and all-mechanical design is now, more than ever, your answer to best bulk delivery at least ton-mile costs.

Truck mount models available in 8-16 ton capacities.

Mail coupon for complete information

fmc FOOD MACHINERY AND CHEMICAL CORPORATION

Putting Ideas to Work

Bulk Transport Systems

RIVERSIDE, CALIFORNIA
HOOPESTON, ILLINOIS

FOOD MACHINERY AND CHEMICAL CORPORATION
BULK FEED SYSTEMS SECTION • HOOPESTON, ILLINOIS OR RIVERSIDE, CALIFORNIA
Please send me complete information on FMC Bulk Feed Systems.

Name_____
Company_____
Address_____
City_____ State_____

VITAMINS
PRECISION BUILT FOR PRECISION NEEDS
VITINC VITAMINS, INC.

BASIC MATERIAL MANUFACTURERS and HEADQUARTERS FOR TECHNICAL INFORMATION
Write or Wire Your Requirements
VITAMINS, INC.
809 W. 58th Street, Chicago 21, Ill.

Study Indicates How Farmers Feel About Elevator Service

EAST LANSING, MICH.—Results of a study to determine how farmers feel about customer service in country elevators in lower Michigan have been reported in a bulletin of the Michigan Feed & Grain Dealers Assn. The results were publicized in connection with a recent Elevator Employees School at Michigan State University.

As reported in the bulletin, the survey, made by 16 observers and interviewers, covered 32 elevators and 75 farmers, and turned up the following complaints customers have about the service at elevators:

"1. Employees do not know where items are kept.

"2. Employees not paying attention to what they are doing, so they put wrong grain or feed in the feed and into bags.

"3. No (not enough) assistance with personal problems.

"4. Lack of service given for items which have been sold.

"5. Lack of adequate bookkeeping and accounting procedures.

"6. Managers and office help don't know about transactions so they can help customers, find records of sales, etc.

"7. Too much high pressure selling used.

"8. Inexperienced or careless employees mixing feed (sick cows, milk reduction, etc., result because of improper mixing).

"9. Same elevator doesn't give the same mix twice.

"10. Too often don't have products on hand, so they have to be ordered, and customer has to wait too long.

"11. Trying to do modern business in antiquated elevator.

"12. Elevator operators do not understand farmers' problems.

"13. Customer has to wait for service, while employees pass time of day with other customers.

"14. If you are a regular customer, you get good service. Other customers get only token service.

"15. Employees do not take time to find out exactly what the customer wants, or assumes he knows, or just makes a guess and gets something else than that which the customer wanted.

"16. This survey indicated that elevator customers do recognize the difference between a good and bad operation. Successful farmer has little respect for, and will do as little business as possible with a slipshod elevator."

APPOINTMENT ANNOUNCED

TULSA, OKLA.—Ozark-Mahoning Co., Tulsa, has announced the appointment of Ralph E. Warren as sales representative in eastern Kansas and Missouri where he has had more than 10 years of experience in selling in the agricultural field.

H. E. Jennings

SALES MANAGER—Appointment of H. E. (Jim) Jennings as sales manager of Ryde & Co., Chicago, manufacturer of dog food and other specialty feeds, was recently announced by L. C. Risberg, president. For two years Mr. Jennings has been regional sales manager of Hill Packing Co., Topeka, Kansas. He was with the dog food sales division of the Quaker Oats Co. from 1945 to 1956, in the latter years serving as national assistant sales manager with headquarters in Chicago.

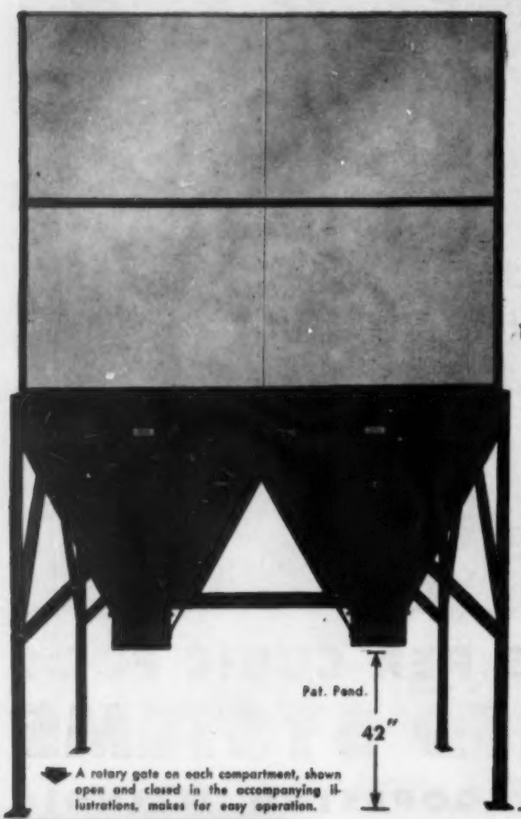
New Illinois Egg Law To Be Effective July 1

SPRINGFIELD, ILL.—The Illinois Egg Law, which defines standards for grading and marketing, will become effective July 1, according to an Illinois Department of Agriculture announcement.

The law states: Eggs must be graded before being sold or offered for sale at retail; bad or inedible eggs can't be sold at retail; a holding temperature of 60° or lower must be maintained from grading point to consumer; eggs sold at retail must be labeled by grade and size; retail advertising must show grade and size spelled out in full; the term "fresh" or any term implying freshness is limited to only grade A or better, and egg dealers must be licensed.

Other regulations state that Class I dealers must identify eggs sold to Class II dealers by including the name and address on each case or lot of eggs, and a dealer's invoice showing grade and size shall accompany all eggs supplied by a wholesale dealer to a retailer. It was further pointed out that farmers selling eggs produced on their farms are exempt from grading, labeling and licensing and that the law does not prohibit any grocery or other store from buying eggs from the producer.

The New Lemanco CLUSTER BIN



A rotary gate on each compartment, shown open and closed in the accompanying illustrations, makes for easy operation.

DESIGNED ESPECIALLY FOR SMALL AND MEDIUM SIZE FEED MILLS

gives

20 TONS STORAGE

at 40 lbs. per cubic foot

This newest addition to the line of LEMANCO all-steel bins handles every type of poultry feed and is also ideally suited for the storage of hog and dairy feeds, concentrates, shell and ground corn, whole oats, etc.

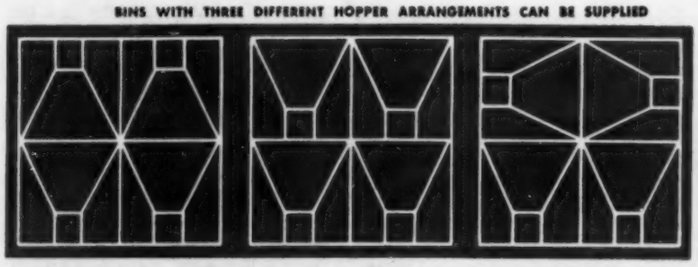
The LEMANCO CLUSTER BIN has four 5-ton compartments to carry four different ingredients. Each compartment has two 60° angles and one 45° angle. The front is practically vertical, which means that most any type of feed will flow with ease.

The bin, which is 10 feet square, has an overall height of 16½ feet, which can be reduced, if necessary, by ordering shorter legs. Standard clearance underneath the rotary gates is 42 inches.

A two-inch flange on top of the bin, pre-punched, makes it possible to extend sides and partitions to roof, provided listed capacity is not unduly increased.

The base of the LEMANCO CLUSTER BIN is made of 14-gauge steel. Sides and partitions are 16-gauge galvanized.

BINS WITH THREE DIFFERENT HOPPER ARRANGEMENTS CAN BE SUPPLIED



STANDARD — Two hoppers facing front and two facing rear

ALTERNATE — Four hoppers facing front

ALTERNATE — Two hoppers facing front and one facing each side

The same method of easy assembly is used as in all LEMANCO bulk feed bins. Estimated shipping weight is 3,200 pounds. Bases are designed to nest and can be delivered six on a 32-foot flatbed truck.

Telephone or write today for prices and delivery.

Lemanco

LEACH MANUFACTURING COMPANY

P. O. Box 1010 — Tel. Liberty 7-5472

GADSDEN, ALABAMA

Fleischmann's F·I·D·Y

IRRADIATED DRY YEAST

RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

IT'S EASY TO SELL

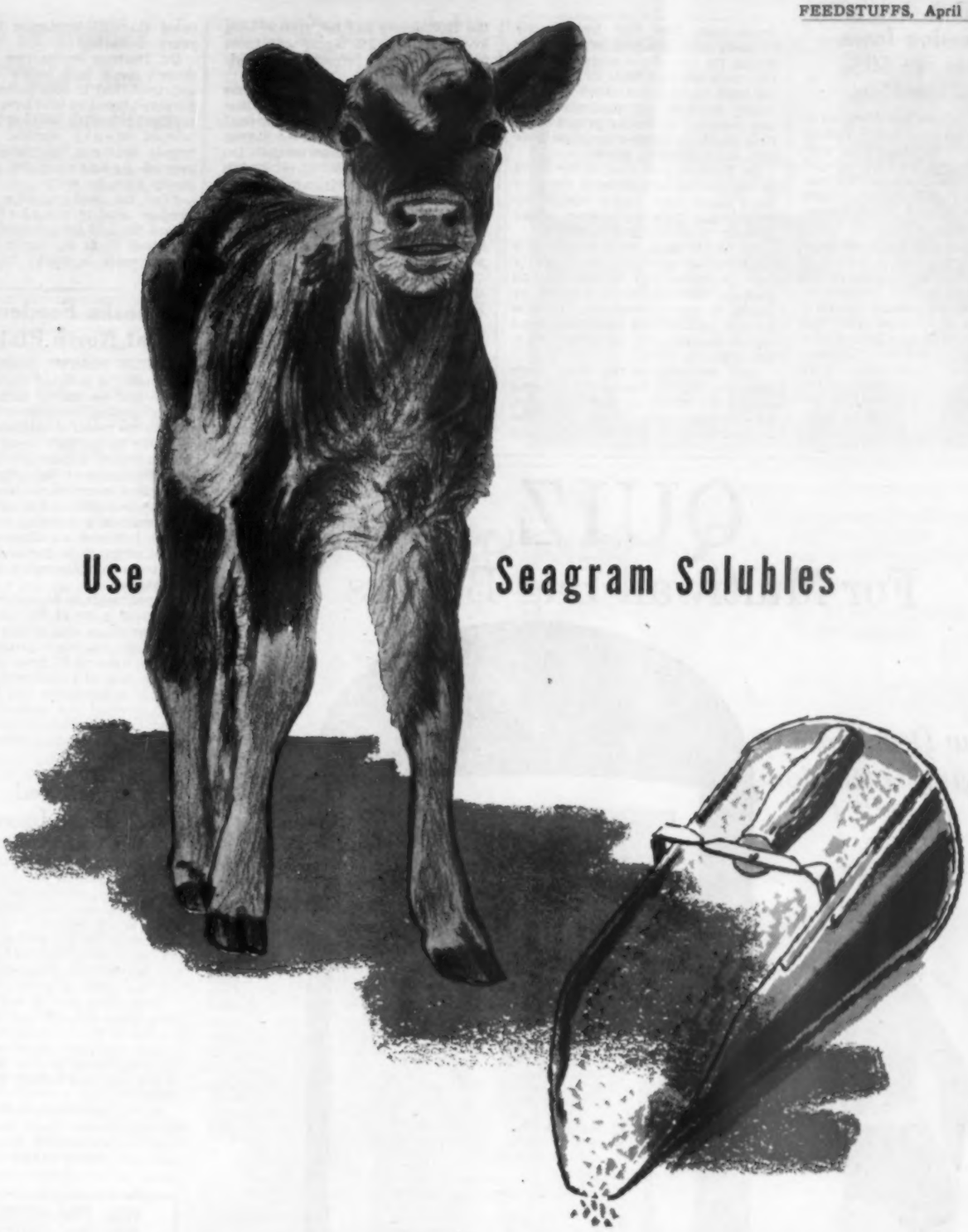
Toxite®

... Because it's the BEST-KNOWN, ALL-PURPOSE FARM DISINFECTANT SPRAY

ANDERSON BOX COMPANY

Indianapolis 6, Indiana

MFD. BY TOXITE LABORATORIES, INC.



Use Seagram Solubles

...and profit on your milk replacer

Tests prove that Seagram Solubles in dry calf starters provide an excellent replacement for expensive dried skimmed milk. This natural, nutritious feed supplement contains all of the essential proteins, minerals and B-vitamins so necessary to early growth and health, plus the added vital value of GFF—*grain fermentation factors.* The result . . . greater weight gains with greater profits to the feeder. Give your customers this feeding advantage by including Seagram Solubles in the rations you sell!

JOSEPH E. SEAGRAM & SONS, INC.
Louisville, Kentucky
GRAIN PRODUCTS DIVISION

Member Distillers Feed Research Council

Seagram SERVICE TO AGRICULTURE

Swine Passing Iowa Boar Tests Hit 50% Or More Lean Cuts

AMES, IOWA—Barrow brothers of boars passing the Iowa Swine Testing Station's 1958-59 fall and winter tests produced carcasses that averaged more than 50% lean cuts in each major group, Dr. Ralph Durham, Iowa State College animal husbandman, reported recently.

Discussing the results of three years of swine production testing in Iowa, he said that at the start of the program in 1956 barrow brothers of boars of one breed passing the tests averaged only 45.1% lean cuts. The all-breed average in the 1959 winter tests rose to 52.3% lean cuts. Barrows from 35 lots of Hampshires that passed the recent test averaged 53.4% lean cuts compared to only 49.5% for the breed in 1956, Dr. Durham said.

The researcher said the results demonstrate how fast Iowa swine breeders have advanced swine quality during the past three years. The station tests are standards to guide on-the-farm testing, and about 40 Iowa county swine testing associations are now carrying on testing programs on their members' farms to improve their own swine-breeding stock.

Dr. Durham said most of the boars in the testing station sales the past three years have been bought by commercial market producers to use in their cross-breeding programs.

He said at least one Iowa packer is receiving enough U.S. No. 1 meaty hogs to enable him to kill, cut and package these premium animals by grade. It was pointed out that this kind of volume has been considered the prerequisite to marketing on a grade-quality basis.

Also indicated in the three years of testing was an increase in the area of loin-eye muscle in the tested pigs, Dr. Durham said. Chops from the barrow brothers of boars that passed the 1958 spring and fall station tests averaged about 9% bigger than those produced in the corresponding tests in 1956.

"Breeds which showed the least meat-type tendencies in their best hogs at the start of the station tests were the ones that showed the biggest improvement after three years," Dr. Durham said. "However, all breeds improved their meat-type qualities as the tests progressed. Landrace and Poland China were the only breeds that averaged above 50% lean cuts in the 1956 spring test. They were still among the leaders, but three other breeds had equalled them by the end of the most recent test in February, 1959."

Berkshires showed an 8% gain in lean cuts between their spring, 1956, test showing and the spring, 1958, showing. The tested strains of Chester Whites gained 10%, Durocs 8%, Hampshires more than 5, Landrace 1, Poland China 3, Spotted Poland China 6, Tamworth 12 and Yorkshire more than 2½% during the three years of testing.

Dr. Durham emphasized that this doesn't mean each entire breed has improved. But it does mean that the purebred breeders who have gone into production testing seriously have developed meaty strains, in many breeds, that can contribute to commercial programs for producing meaty hogs, he said.

"For the producer who wants to produce quality market pork, it means his field for selection of breeding stock to fit his herd's particular requirements is good," Dr. Durham said.

Nebraska Feeders Day Set at North Platte

NORTH PLATTE, NEB.—Reports on studies of pelleted feeds for beef cattle and the use of safflower meal as a protein supplement will be among the research discussed at Feeders Day to be held April 23 at the North Platte Experiment Station of the University of Nebraska.

Various experiments involving approximately 400 head of cattle will be discussed in a morning tour of the cattle lots and an afternoon educational program in the auditorium of the main administration building of the station.

Experiments to be discussed include one using a lot of 90 head wintered on corn silage and safflower meal as compared to other protein supplements; a lot of 66 head wintered on prairie hay with safflower and other protein supplements, and a lot of 64 head involved in a comparison of pelleted vs. non-pelleted feed. Another group of 130 steers is being wintered for summer studies.

Arkansas Feed Sales Show Increase

LITTLE ROCK, ARK.—Feed sales in Arkansas during the second quarter of the 1958-59 fiscal year showed a 21% increase over the same period a year earlier, the Arkansas State Plant Board reports.

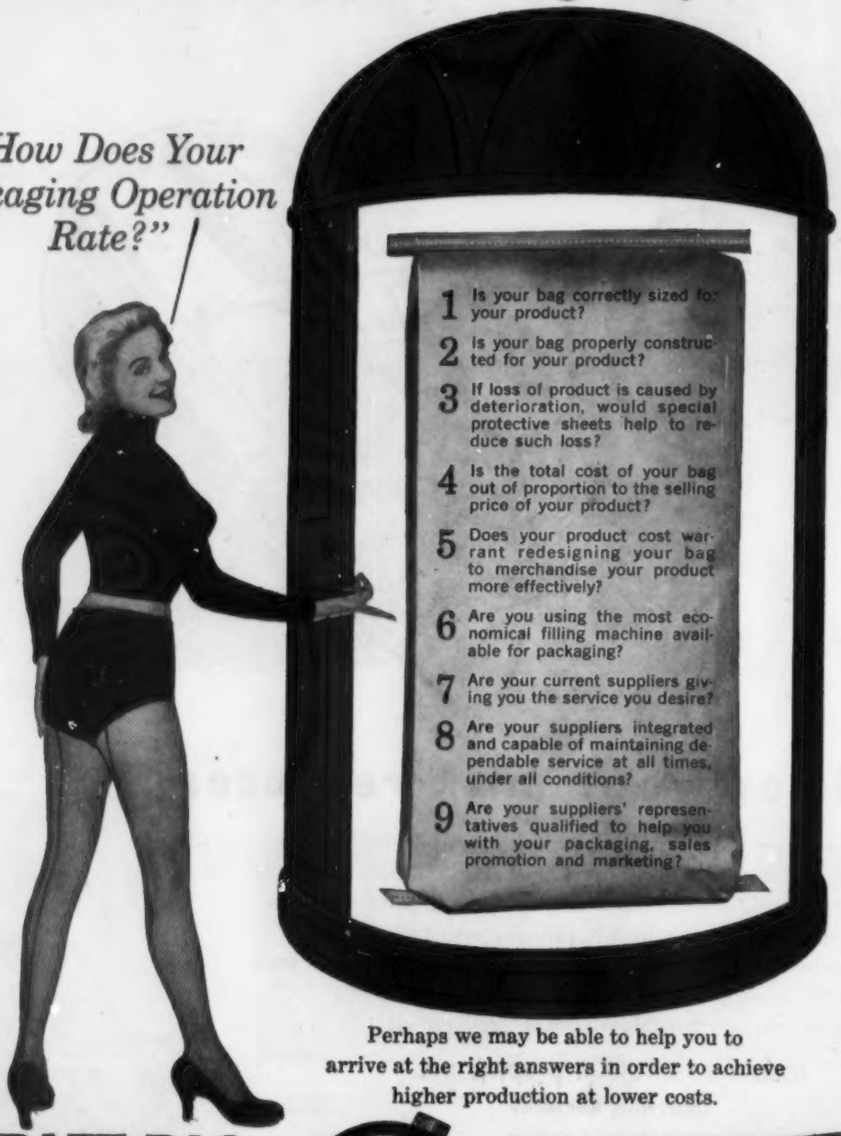
Tonnage for the period, which covers Oct. 1, 1958, through Dec. 31, 1958, was 341,694 tons, compared with 281,210 the previous year.

More than half of the total sales were poultry feeds, and among poultry feeds the broiler, starter and grower category accounted for 133,261 tons. Dairy or cow feeds totaled 31,703 tons and turkey feeds totaled 28,595.

For the first two quarters combined of the current fiscal year, tonnage sales topped 665,000 tons, compared with a little over 548,000 for the same period of the previous year.

QUIZ
For Multiwall Bag Buyers

"How Does Your Packaging Operation Rate?"


1 Is your bag correctly sized for your product?
2 Is your bag properly constructed for your product?
3 If loss of product is caused by deterioration, would special protective sheets help to reduce such loss?
4 Is the total cost of your bag out of proportion to the selling price of your product?
5 Does your product cost warrant redesigning your bag to merchandise your product more effectively?
6 Are you using the most economical filling machine available for packaging?
7 Are your current suppliers giving you the service you desire?
8 Are your suppliers integrated and capable of maintaining dependable service at all times, under all conditions?
9 Are your suppliers' representatives qualified to help you with your packaging, sales promotion and marketing?

Perhaps we may be able to help you to arrive at the right answers in order to achieve higher production at lower costs.

KRAFT BAG CORPORATION
Gilman Paper Company Subsidiary
630 Fifth Avenue, New York 20, N. Y.
Daily News Bldg., Chicago 6, Ill.
Plants at St. Marys, Ga. and Gilman, Vt.
Sales Agents for The Kraftpacker Open Mouth Bag Filling Machine

Gilman PAPER CO.
• St. Marys Kraft Corp.
• Gummed Tape Div.
• The Coltwood Corp.
• Kraft Bag Corp.

☐ O.K. Kraft... Help me to answer your Quiz. Please have representative call.
COMPANY
ADDRESS ZONE STATE
CITY
PRODUCT MFD. NAME

NO PRE-GRINDING
NO PRE-CRUSHING
REQUIRED ! !

WITH W-W HAMMERMILLS
Patented Star Cylinder eliminates any necessity to pre-grind or pre-crush baled hay and ear corn. Many other features developed during 50 years of manufacturing make W-W your best buy.

W-W PERMANENT MAGNETIC SEPARATORS...

WITH A FOREVER GUARANTEE

30% more pull than any comparable magnet. Has protective casing. Hinged or plain for feed table or spout installation. Immediate shipment.

W-W GRINDER CORP.
Liberal Terms . . . Write
Dept. 311
2957 No. Market Wichita 4, Kans.

Color of Broiler May Yield Clue On Value to Flock

ST. PAUL—Color of a broiler may yield a clue to whether the bird should be kept for the breeding flock, University of Minnesota research has shown. Dr. Robert Shoffner, poultry geneticist, already advised breeders to eliminate broiler stock with any black color and birds with dark bars on their wings.

He bases this recommendation on five years of tests which show that birds having black color or bars—along with some "dominant" white—average 1/16-⅛ lb. lighter than red, silver or mixed color birds at 10 weeks of age. Such a difference can hurt the producer's profits in a flock of 20,000 birds, he said. "Dominant" white is an inherited characteristic that inhibits color in offspring.

Dark pinfeathers have a pigment that sometimes leaves objectionable color on the skin. And since color is inherited, the birds with the objectionable black or barred feathers need to be eliminated, according to the Minnesota geneticist.

Just why certain color characteristics are linked with size reduction isn't known, he said, but the differences are important. All-white birds, for example, are lighter at 10 weeks than colored ones. Yet, he said, breeders don't want to eliminate white because white pinfeathers do not discolor the skin and therefore make for a higher quality market bird. "So the problem now is to find color combinations that include 'dominant' white but still produce birds that grow well," commented Dr. Shoffner.

It was explained that like all inherited characteristics, color is transmitted by "genes." Different color combinations result from different combinations of genes. A complicating point in broilers is that an "interaction" of some kind occurs among genes and is tied to the bird's ability to grow. For example, birds with gene combinations for white, black and bars tend to be poorer gainers. On the other hand, a combination of genes for white and silver color does not result in size reduction, Dr. Shoffner said.

Dr. Shoffner is continuing research to learn more in determining which gene combinations to keep and which to eliminate in poultry breeding. A similar problem may exist in laying hens, he said, but this problem has not been studied extensively so far.

Missouri Announces Microscopy Course

COLUMBIA, MO.—A feed microscopy short course will be conducted at the Missouri College of Agriculture, with the cooperation of the Missouri State Department of Agriculture, the week of June 8, it has been announced by G. M. Barnhart, secretary-treasurer, American Association of Feed Microscopists. He said the course will be open to representatives of feed manufacturing companies and state feed control departments.

Mr. Barnhart, who is also chief chemist for the Missouri State Department of Agriculture at Jefferson City, will be in charge of the short course. Persons interested in attending were advised to contact Mr. Barnhart as soon as possible.

Mr. Barnhart assisted E. E. Brown of Texas A&M in conducting similar courses there during the past two years.

Four Engineers Added By Hot Spot Detector

DES MOINES—Hot Spot Detectors, Inc., Des Moines, has announced the addition of four new engineers during the last four months to the firm's research and development department. The four are William Johnson, Jr., Kenneth V. Brauns, LeRoy J. Thompson, and Wesley Jones.

Mr. Johnson is a graduate of the University of Washington with a bachelor of science degree in electrical engineering. He formerly was associated with IBM in New York.

Mr. Brauns attended the University of Minnesota, American University in Washington, D.C., and the Dunwoody Industrial Institute, Minneapolis. Before joining Hot Spot, he was with Remington Rand Univac, St. Paul, Minn.

Mr. Thompson is another former Remington Rand employee. Before associating with Remington Rand, he was retained by the Neo-Ray Products Co.

Mr. Jones gained his electronics experience with B. F. Nelson Manufacturing Co., Page Communications and Collins Radio Co., Cedar Rapids, Iowa, the announcement said.

PURE REEF OYSTER SHELL IS RECOGNIZED BY THE POULTRY INDUSTRY TO BE THE BEST SOURCE OF CALCIUM FOR POULTRY. THROUGH ITS USE THE POULTRYMAN OBTAINS...

- INCREASED EGG PRODUCTION
- IMPROVED EGG QUALITY
- BETTER SHELL QUALITY
- HIGHER HATCHABILITY
- HEALTHIER POULTRY

You should have the Best in Oyster Shell. Samples of Snow Flake brand furnished upon request.

Phone OR 2-9441
WRITE WIRE PHONE

MAYO SHELL CORP.
P. O. BOX 784 • HOUSTON, TEXAS

ALL OVER NORTH AMERICA

Ultra-Life PER SCHOOLS

- ☐ IN NEWEST LIVESTOCK AND POULTRY NUTRITION METHODS
- ☐ IN FARM SERVICE TECHNIQUES
- ☐ IN FEED MANUFACTURER — CONSUMER COOPERATION
- ☐ IN FEED SALES AND SERVICE METHODS

HELP Ultra-Lifed FEED MANUFACTURERS BOOST SALES!

Ultra-Life

TESTING:
In laboratory and field, constantly seeking to unlock nutritional secrets.

PERFECTING:
Development of more productive, lower cost rations.

TRAINING:
Through schools and meetings, teaching Ultra-Lifed Feed Manufacturers employees, poultry and livestock nutrition, feeding and sales programs.

SELLING:
Furnishing Ultra-Lifed Feed Manufacturers with proven sales programs, feeding programs, complete advertising materials to help them sell more feed.

In 1958, Ultra-Lifed Feed Manufacturers — from Canada to Mexico, the Atlantic to the Pacific — benefited from many thousand person-days of discussion in the newest nutritional developments, consumer service and sales techniques, in meetings sponsored and conducted by Ultra-Life Laboratories.

After attending one of these meetings, the editor of a leading feed trade publication wrote . . . "Unquestionably the participants returned to their baliwicks with strengthened selling strategy and ammunition". The President of a large feed manufacturing concern sums up one meeting this way . . . . "I believe we will both profit considerably from this meeting".

Keeping posted, developing new and improved sales techniques, are extremely important to feed manufacturers today. Ultra-Lifed Feed Manufacturers are leaders in their areas because the Ultra-Life program keeps them posted and develops new and improved sales techniques for them.

Write today for your copy of "Making Feeding Pay the Record Way". Get full details of the Ultra-Life Program in action.

Ultra-Life LABORATORIES, INC.
Main Office and Plant, East St. Louis, Illinois

One of the country's oldest and largest manufacturers of vitamin and trace mineral products.

Improved Customer Service Builds Ohio Firm's Volume

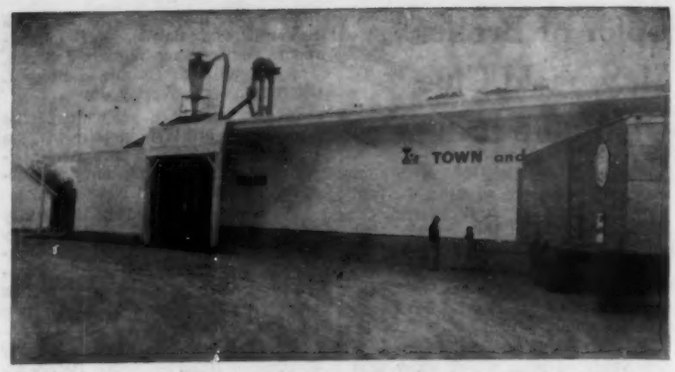
By Al P. Nelson
Feedstuffs Special Writer

Merchandising and service trends in the feed industry today call for improved efficiency in both the custom mill and in the adjoining farm supply store. In the case of the Fairfield County Farm Cooperative Assn., Lancaster and Baltimore, Ohio, several improved management policies are paying off in better business and more customers.

The firm's bulk service is one example. A bulk truck was purchased about a year ago and was used to deliver bulk feed between the Baltimore and Lancaster plants, 20 miles apart. Now, bulk service is increasing, the management is thinking about purchasing a second truck.

An auger-type truck was chosen for the entry into the bulk feed field, states Ralph De Rolph, manager, because quite a few farmers wished to build their own bins, and augering into them is a simple process.

The second step to give farmers service in this area was that of shelling corn on the farm. The firm has a Minneapolis-Moline corn sheller which travels through the corn areas with a crew and shells at corncrib sites. Sometimes the farmer wants the shelled corn stored on his farm, and sometimes he wants it hauled to the cooperative's mill at Baltimore or Lancaster to use in a feed ration. Or, the farmer may wish to sell the corn from the crib to the cooperative.



ATTRACTIVE EXTERIOR—This is the exterior of the feed mill and warehouse of the Fairfield County Farm Cooperative in Lancaster, Ohio. The firm has operations also in Baltimore, Ohio. Named "Town and Country Center," the mill and feed store makes neatness and good appearance a "must."

By shelling at the crib, Mr. De Rolph says, he does not have the problem of disposing of the corn cobs. Also, he says, in these days when farmers are occupied with many farm duties, they appreciate a crib shelling service, for it saves them time and labor. Mr. De Rolph charges from 15¢ to 20¢ bu. for shelling corn, depending upon the service asked.

Integration

The third step in this firm's plan is an integration plan for layers located between the Lancaster and Baltimore branches. Mr. De Rolph and Paul Bright, the company's service manager, have been finishing the details of the plan. Under the integration plan, Mr. De Rolph will contract with the farmer to take quality chicks and furnish the feed and equipment so that the farmer can produce quality eggs. The farmer will be paid a certain sum for producing the eggs, and the Fairfield cooperative will market them.

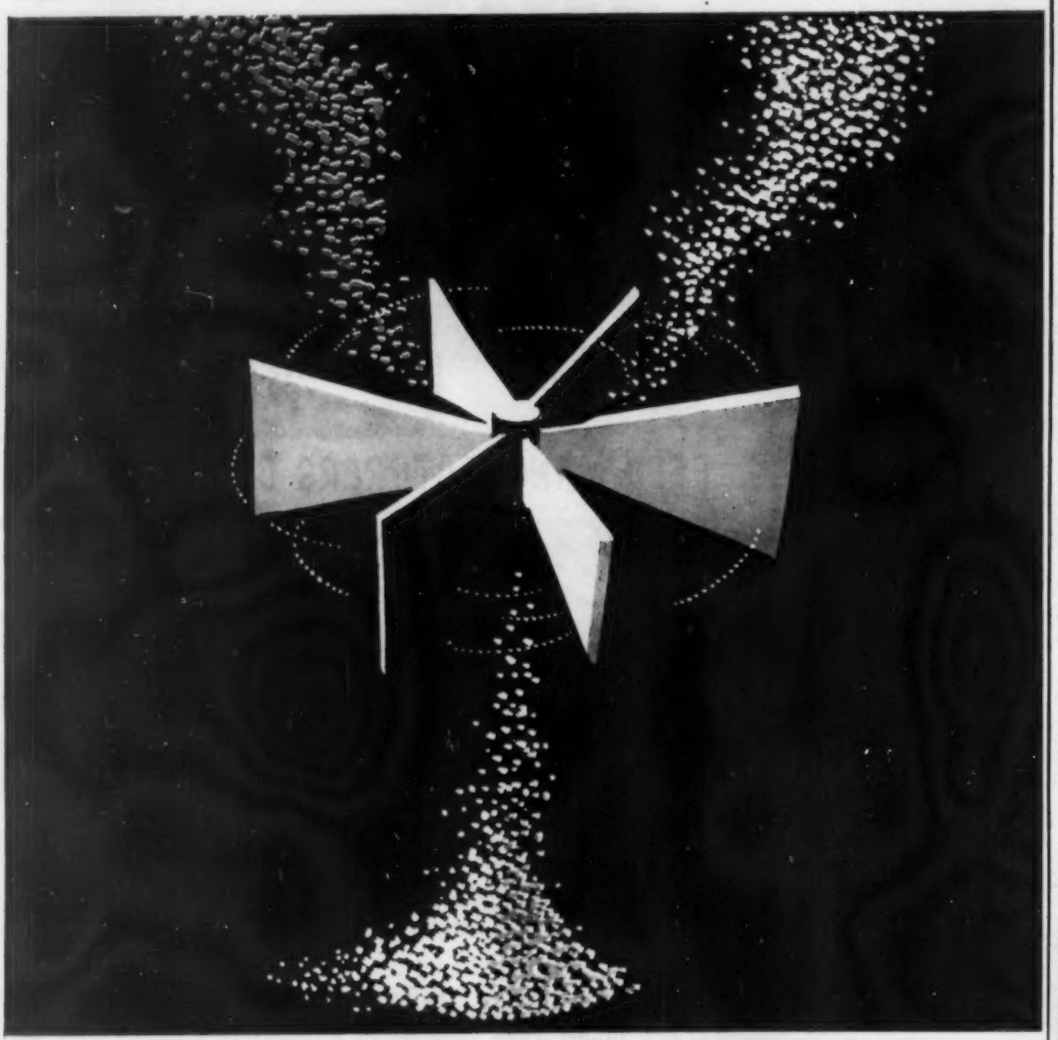
Mr. De Rolph has contacted many supermarkets in the region, and he states that managers have told him there is demand for quality eggs and that they can bring a premium. Mr. De Rolph feels that his organization can handle such a plan and provide farmers with greater profit per dozen eggs produced while the cooperative sells more feed.

"If the local feed supplier does not get into a sound integration plan, the chances are that his competitors will," said Mr. De Rolph. "We feel we have the facilities and the resources to make such a plan work between our two locations."

Two years ago, this firm remodeled

(Turn to page 56)

MANAGER—Ralph De Rolph (left), manager of the Fairfield County Farm Cooperative Assn., is showing a customer a can of grease from the well stocked shelves of the association's farm store.



NIACIN USP BLENDED WITH SOY FLOUR

from Plastics and Coal Chemicals Division...
Specifically designed for the manufacture of vitamin premixes

- Niacin for animal and poultry feeds in three convenient grades:
  (1) USP Grade
  (2) Niacin F-5 (50% niacin, 50% soy flour)
  (3) Niacin F-8 (80% niacin, 20% finely pulverized soy flour)
- Produced to highest standards of purity through basic position in raw materials and most modern equipment.
- Available from our manufacturing plant at Philadelphia and warehouses at Los Angeles and Chicago.

PLASTICS AND COAL CHEMICALS DIVISION
40 Rector Street, New York 6, N. Y.

Allied Chemical

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

BALANCE

it's always important to bag-buyers

No *one* thing makes a kite fly. And, in the bag business,
success requires that many essentials be present in perfect balance.
With Chase bags, this includes minute quality control in production . . .
knowing how and where to select the right paper or other
material for absolute protection without waste . . .
and giving the kind of individualized customer service that keeps
the name Chase sky-high among bag users.

Our 112th Year

CHASE

BAG COMPANY

General Sales Offices: 155 East 44th Street, New York 17, New York

BAG PLANTS AND SALES OFFICES COAST TO COAST – A NATIONWIDE STAFF OF BAG SPECIALISTS

How you can save on vitamin A costs by buying according to...

bio-availability of vitamin A sources

Different sources of vitamin A—fish liver oils, other vitamin A oils, products where the vitamin is absorbed on cereal carriers or stabilized with wax, animal fat or vegetable gum—vary in biological availability due to differences in composition, digestibility, and other characteristics of the carrier, as well as the physical state of the vitamin.

Here are facts that show Pfizer Vitamin A Palmitate in Gelatin's superior biological availability helps make it the lowest cost source of vitamin A activity when *true cost* is considered—the cost of the vitamin actually utilized by the bird or animal.

In general, biological availability of a vitamin A source is measured by the percentage of the ingested dose which is absorbed and utilized by the animal, as compared to a defined standard.

This availability is influenced to a considerable extent by the physical state of the vitamin and by the composition, digestibility, and other characteristics of the carrier.

Why physical state of vitamin A is important

There is a great deal of evidence that the physical state of the vitamin A source has a marked effect upon efficiency of utilization.

Numerous published reports of clinical studies with humans show that aqueous emulsions of vitamin A are more efficiently utilized than oil solutions according to evidence obtained from blood serum levels, liver storage and fecal excretion data.

AVAILABILITY OF VITAMIN A IN FISH LIVER OIL
—aqueous dispersion vs oil solution—U.S.P. reference oil—100

Material	Particle Size (Microns)	No. of Animals	Avg. 3-Hr. Plasma level U./100 Ml	Avg. % Vit. A in Liver	Avg. % Vit. A in Feces
Fish liver oil	Macroscopic	48	620	25	20
Emulsion	1-20	70	1370	38	12
"Aqueous"	Submicroscopic	48	2370	50	7

NOTE: The same observation can be made with stabilized vitamin A beadlets, where there is no difference in the medium.

Similar results have been reported with cattle, swine, dogs, chicks and rats.

The vitamin A particles of Pfizer Vitamin A Palmitate in Gelatin are in the same size range as those found in aqueous products. This is one reason for its increased biological availability.

Small vitamin A particles most effectively utilized

Particle size of the vitamin A has been found to affect efficiency of utilization. In rats, particles of vitamin A two microns or less in diameter dispersed in gelatin gave 69% greater liver storage than an oil solution. With a 5-micron size, liver storage was 24% greater than the oil.

Even when comparisons are made with vitamin A in gelatin, the influence of particle size is apparent:

AVAILABILITY OF VITAMIN A IN GELATIN
—influence of particle size—

Material	Particle Size (microns)	Biological Availability
vitamin A palmitate	0.5-4.0	176
vitamin A palmitate	5-8	130
vitamin A palmitate	14-17	96

NOTE: Particle size refers to the size of the vitamin A particles within the beadlet itself.

As you can see, particle sizes of under 4 microns give the best biological availability.

While control of particle size is difficult, a unique manufacturing process developed by Pfizer scientists makes it possible to produce gelatin beadlets with many particles of vitamin A contained within each beadlet. Most of these vitamin A particles range from ½ to 4 microns in diameter and are distributed uniformly throughout the gelatin beadlet.

Composition and digestibility of carrier affect availability

When vitamin A oils are fed, the animal must first emulsify and disperse them as extremely fine particles before absorption takes place.

Waxes, animal fats or oils absorbed on cereal carriers do not dissolve readily in the gastric fluids, but must first be emulsified and absorbed well along in the intestinal tract.

They may actually retard absorption whereas the gelatin matrix of Pfizer Vitamin A Palmitate in Gelatin allows rapid release of the micron-sized particles permitting prompt absorption.

This results in greater biological availability as determined by liver storage and blood levels, and by growth and mortality figures.

Ask your Pfizer representative for additional facts that show Pfizer

Chas. Pfizer & Co., Inc.
Science for the world's well-being
Suppliers of antibiotics, vitamins and other growth-promoting feed ingredients

Pfizer Vitamin A

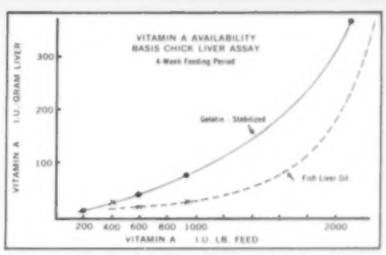
630 Flushing Ave., Brooklyn 6 • 6460 W. Cortland St., Chicago 35 • 1500 16th St., San Francisco 3 •

Pfizer scientists remove samples of liver tissue from living bovine to compare bio-availability of various sources of vitamin A in large animals.

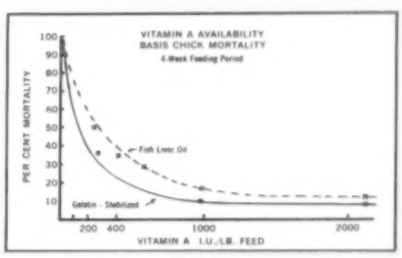
Vitamin A Palmitate in Gelatin's greater biological availability—its superior stability in feeds of all types—makes it the lowest cost source of vitamin A activity when *true cost* is considered . . . the cost of the vitamin put into your feeds, the cost of the vitamin actually utilized by the animal.

Only Pfizer's Vitamin A Palmitate in Gelatin gives you all these important advantages:

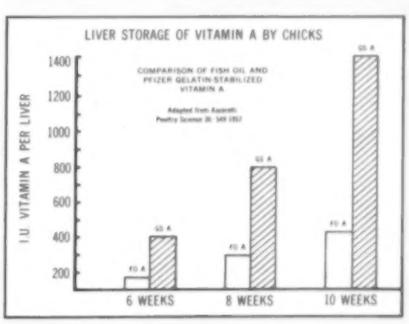
- **Outstanding stability in pelleting and pelleted feeds, mineral mixes, concentrates, high-moisture feeds.**
- **Greater bio-availability, unit for unit, than fish liver oils, other vitamin A oils, products where the vitamin is absorbed on cereal carriers or stabilized with wax, animal fat or vegetable gum.**
- **Controlled-size, dry, free-flowing beadlets assure uniform distribution in feeds. No oil to heat, no spraying, no clogging.**
- **99 plus percent pure vitamin A; no impurities to accelerate "A" loss; assay by USP and colorimetric methods gives essentially same potency.**



Liver storage data show consistently larger quantities of vitamin A stored in the groups getting the gelatin-stabilized form. The biological availability by the liver storage criterion is about 67% greater for the gelatin product.



Mortality data indicate 85% higher biological availability of the gelatin-stabilized form.



The relative biological availability of Pfizer's Vitamin A Palmitate in Gelatin was 423%, 364%, and 405% of that of the oil form at 6, 8, and 10 weeks.

Palmitate in Gelatin

7600 Ambassador Row, Dallas 7 • 5251 Peachtree Industrial Blvd., Chamblee, Ga. • In Canada: 5330 Royalmount Rd., Montreal 9, P.Q.

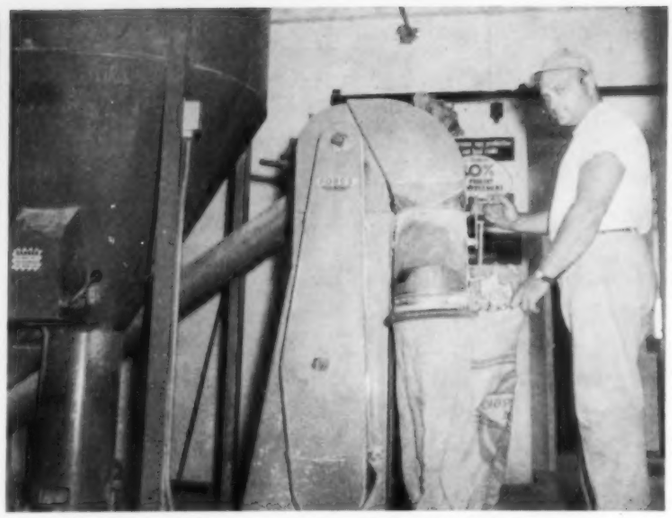
WELL-STOCKED—In addition to a good stock of farm supplies, the Town and Country Center of the Fairfield County Farm Cooperative in Lancaster, Ohio, displays its stock effectively. Note the use of the pegboard.

its mill and installed new machinery. Equipment at this time includes two Fords mixers (2½ and three ton); a Fords molasses blender; an 18-in. Schutte mill at Lancaster and a 22-in. Schutte mill at Baltimore; two Sidney hoists, a 30-ton Fairbanks scale and a Triumph corn cracker, plus the corn sheller previously mentioned.

Record Keeping

"We keep accurate records on our custom mill operations," states Mr. De Rolph. "The custom mill bears the mill and office overhead and also pays a profit in addition. Grinding and mixing revenue for a typical seven-month period in 1958 showed $10,468 income from the two mills. Sales of feed without grinding and mixing charges amounted to $242,500 for the same period, and fertilizer sales amounted to $75,750. Tons of formulated feed sold in the same period were 834, as against 531 tons in 1957. We think our integration plans will further increase our feed business within a year or so."

Mr. De Rolph also reports that the firm sold 741,000 lb. of molasses in feeds during the past three years. Farmers in 1958 in this area wanted more molasses than usual in their hog feed due to peculiarities in the wheat crop. Hog men here used two thirds corn and one third wheat in their 1958 grain rations for hogs.



BAGGING OPERATION—An employee of the Fairfield County Farm Cooperative, Lancaster and Baltimore, Ohio, is shown bagging feed.

One feeder brings in 10,000 lb. of grain at one time for grinding into a hog ration. There are also many other large-scale hog raisers in the area who have grinding and mixing done at either Lancaster or Baltimore.

Serviceman

Mr. De Rolph, while attributing much of the firm's progress to the new merchandising trends and services already mentioned, points out that his field serviceman, Paul Bright, is also responsible for many sales. Mr. Bright has taken many of the Farm Bureau training courses at Ohio State University. He spends a great deal of his time visiting poultry and hog raisers and does not hesitate to go into details of working out individual feeding programs. In fact, Mr. De Rolph said, many customers look upon Mr. Bright as a partner in their poultry and hog raising operations.

Quite a few farmers in this section are buying steel storage bins for bulk feed storage, while others build wooden bins. Many hog feeders have the bulk trucks dump large loads of feed directly into hog lot feeders.

The farm cooperative organizations in Ohio are naming their stores and mills "Town and Country Centers." The Lancaster plant is a very neat and efficient establishment and lives up to this new name. The buildings and the mill are kept clean and attractive at all times.

Mr. De Rolph has an office in a building apart from the mill, but within easy reach. Last year a farm supply store area was installed in one section of the feed warehouse, and it is prospering.

A varied selection of farm hardware, poultry and livestock remedies, oils and greases, poultry and hog house equipment and related items are stocked. The store walls have pegboard covering which makes it relatively easy to attain shelves for display purposes.

"We decided to open this farm supply store when we noticed how often farmers asked for remedies and other items," said Mr. De Rolph. "Why should we let these sales go elsewhere? It's surprising how many articles the average feed customer will buy. But we know we've got to display such items if the farmer is to see them and want to buy them."

The farm store display area is about 20 by 30 ft. In addition to the pegboard on the display walls there are also a number of counters and tables built by the feed firm staff.

"We are checking carefully on the turnover of our stock, and may add additional lines later on," reports Mr. De Rolph.

NEW LOW COST AUTOMATIC BATCHING
WITH INSTANT FORMULA CHANGING

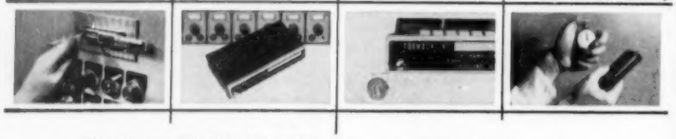
HOWE BATCHPLUG

1 Quickly and easily adjusted to accurate settings.

2 Each standard Batchplug controls up to 10 ingredients, 3 scales.

3 Sealed for privacy—no dials to reset—no operator error.

4 Inserting Batchplug changes entire plant to new formula instantly.



The Howe BATCHPLUG* cuts panel and circuit costs—puts automatic batching in everybody's reach! Simple, rugged, easily set for any formula up to 10 ingredients. An exclusive Howe development! *Pat. pending.

HOWE
THE HOWE SCALE CO. • RUTLAND, VT.
A SUBSIDIARY OF SAFETY INDUSTRIES, INC.

WRITE TODAY FOR OFFICE DEMONSTRATION OR NEW BATCHPLUG FOLDER

Yes!
He's looking for some of your dog food made with our complete dog food cereals

★ TOASTED CORN FLAKES
★ TOASTED WHEAT FLAKES
★ CORN GRANULES
★ KIBBLED CORN
★ KIBBLED WHEAT
★ KIBBLED PREMIXES

(Straight or Mixed Shipments)

Carloads — Truckloads — LCL — LTL

LAUHOFF GRAIN COMPANY

PHONE 1800
Cereals of Quality Since 1862
Danville, Illinois
TELETYPE 8261

Lilly INTERVIEWS

ALBERT KOLLER, PARKER, S. D.

"I wish we'd found Hygromix worm control 40 years ago!"

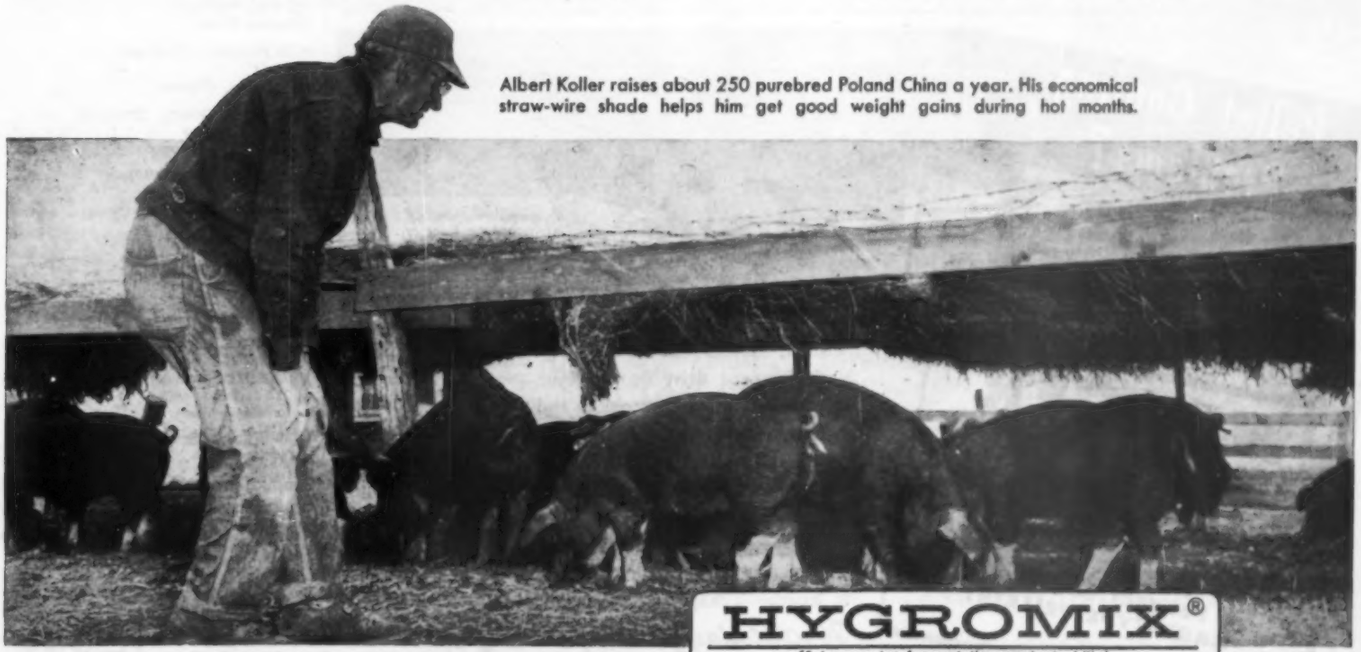
"Old-type wormers were either too hard on the pigs or didn't get the job done," says veteran Poland China breeder.

by Eugene S. Hahnel

Over the years, Mr. Koller has tried just about everything to solve the problem of swine worms. In October 1957, he tested Hygromix feed on 100 pigs. They were kept on Hygromix until they reached about 90 pounds. At around 80 pounds, he test-wormed them with a "one-shot" wormer. The results? In Mr. Koller's own words, "This Hygromix was doing a real job . . . it's the best wormer we've ever had on the market so far. It stops the worm problem from getting started. Old-type wormers were either too hard on the pigs or didn't get the job done satisfactorily."

With those words, Mr. Koller shows that he understands what Hygromix is all about. *Three* of the most damaging kinds of worms never get a chance to mature and lay eggs. Day after day, Hygromix kills new, young worms as they enter the intestines. You need no longer sit and wait for the right time to purge worms, and worry about the damage they're doing in the meantime. Just keep Hygromix-fortified starter and grower rations before your pigs until they reach 100 pounds. By that time you will have protected them against worms clear through the critical period when worms do the most damage.

Albert Koller raises about 250 purebred Poland China a year. His economical straw-wire shade helps him get good weight gains during hot months.



HYGROMIX®

(*S. hygroscopicus* fermentation products, Lilly)

Lilly

Makers of **STILBOSOL®** (diethylstilbestrol premix, Lilly)
Procaine-Penicillin-G • Vitamin B_{12}
Micro-Pen™ (special coated procaine penicillin G, Lilly)

ELI LILLY AND COMPANY • AGRICULTURAL AND INDUSTRIAL PRODUCTS DIVISION • INDIANAPOLIS 6, IND.

BINGMAN'S Animal Health Products

Less Mastitis—Higher Milk Production — More Profits

new approach to Herd Health

Results of tests using
BINGMAN'S P-17

During this test period herds were fed BINGMAN'S P-17 at low level.*

BINGMAN'S P-17

WHEN FED AS DIRECTED P-17

Aids in Control of MASTITIS

Aids in Reduction of SCOURS

Aids in Prevention or Treatment of FOOT ROT

Aids in Reduction of RESPIRATORY INFECTIONS

	FIRST TEST			SECOND TEST (in 60 days*)			
	Herds Tested	Quarters Tested	Clear	Quarters Infd.	Tested	Clear	Infd.	Percent Cleared
A.	32	21	11	28	28	0		100%
B.	95	76	19	112	108	4		79%
C.	80	34	46	68	55	13		72%
D.	68	52	16	68	64	4		78%
E.	74	38	36	79	72	7		81%
F.	83	60	14	78	76	2		85%
G.	60	34	26	44	39	5		81%
H.	36	27	9	28	26	2		77%
I.	16	11	5	16	15	1		80%
J.	32	16	16	28	25	3		81%
K.	48	41	7	60	59	1		86%
	624	419	205	609	567	42		79.5%

INDICATION OF SEVERITY OF INFECTION

Degree	1st Test	2nd Test
Slight	94	30
Infected (Mastitis)	66	9
Chronic (Mastitis)	45	3
Total	205	42

ASK ABOUT BINGMAN'S P-17 GUARANTEED FEEDING PROGRAM!

BINGMAN LABORATORIES, INC.
A Subsidiary of S. A. H. LABORATORIES, Inc., CALDWELL, OHIO
Note: Sales representatives wanted in many good areas. Write for details.

DISCUSS PAPER BAG USES—An estimated 60 representatives of firms that use large quantities of paper bags attended a dinner-seminar recently at the Minneapolis (Minn.) Athletic Club. Conducting the meeting was the multiwall bag division of the West Virginia Pulp & Paper Co. Talking over bag uses in this photo are (left to right): Eugene DuBois, the firm's district sales manager, Minneapolis; Norris G. Heglund, Archer-Daniels-Midland Co., Minneapolis; Chester Johnson, Land O'Lakes Creameries, Inc., Minneapolis, and Tom L. Jones, regional sales manager for the bag firm.

Regional ADA Meeting Held in Minneapolis

MINNEAPOLIS—Twenty-seven alfalfa dehydrators from seven states attended a recent Northwest regional meeting of the American Dehydrators Assn. in Minneapolis.

States represented were Minnesota, Iowa, Wisconsin, North Dakota, South Dakota, Nebraska and Missouri.

The newly-approved antioxidant, Santoquin, was discussed at length; the six-day week was given an airing, and the consensus was that it had been a good move in 1958 and should be continued in 1959.

Ralph Beermann, ADA president, and Richard Brierley, first vice president, each talked about the growing interest in association activities. About 20 new applications for membership this year have been received. The group voted in favor of Colorado Springs as the 1960 convention site.

The day before the Minneapolis meeting ADA officers met in Wahpeton, N.D., to talk with a group of farmers and feeders about the value of dehydrated alfalfa in feeds. At the close of the meeting, which was sponsored by the Wahpeton Chamber of Commerce, it was suggested that a study group be formed to give further consideration to installation of a dehydrator for utilizing local crops and for disposing of the production on a strictly local basis.

VAN DUSEN HARRINGTON
DIVISION
F. H. Peavey & Co.
GRAIN SOYBEANS FLAX
Founded 1852
MINNEAPOLIS Pv DULUTH

Myvamix®
VITAMIN E
FEED SUPPLEMENT
IS DISTRIBUTED BY:

THE AMBURGO COMPANY, INCORPORATED
1315-17 Walnut Street
Philadelphia 7, Pennsylvania

CARROLL SWANSON SALES COMPANY
2215 Forest Avenue
Des Moines 11, Iowa

FEED PRODUCTS, INC.
1370 11th Street
Denver, Colorado

W. M. GILLIES, INC.
244 California Street
San Francisco 11, California

GOOD-LIFE CHEMICALS, INC.
310 South First Street
Effingham, Illinois

HOLT PRODUCTS COMPANY
Box 840
Milwaukee 1, Wisconsin

KINDSTROM-SCHMOLL COMPANY
418 Flour Exchange
Minneapolis 15, Minnesota

M. A. McCLELLAND COMPANY
Dwight Building
Kansas City 5, Missouri

PLESS AND SHEAHAN
P.O. Box 2654
Memphis 2, Tennessee

THE JOHN F. YOUNG COMPANY
3270 Southside Avenue
Cincinnati 4, Ohio

IN CANADA
CHARLES ALBERT SMITH, LIMITED
356 Eastern Avenue
Toronto, Ontario

8307 Royden Road
Montreal, P. Q.

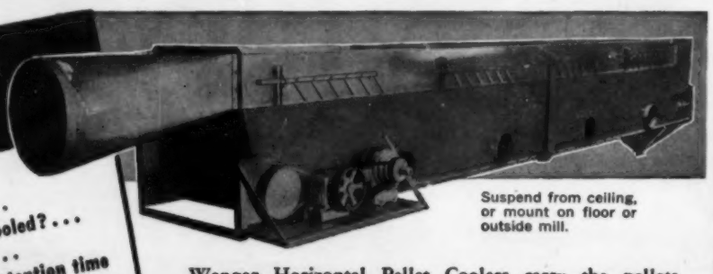
And, of course, you can get it directly from *Distillation Products Industries*, Rochester 3, N. Y. Sales offices: New York and Chicago.

producers of
Myvamix
Vitamin E
DPi
Distillation Products Industries
is a division of
Eastman Kodak Company

Pellet Cooling Problems?

- Too many fines?...
- Pellets hang up in cooler?...
- Larger cubes inadequately cooled?...
- Uneven cooling of pellets?...
- No satisfactory control of retention time of pellets in cooler?

WENGER HORIZONTAL PELLET COOLERS are the answer TO PERFECT COOLING OF HARD-TYPE PELLETS!



Suspend from ceiling, or mount on floor or outside mill.

Wenger Horizontal Pellet Coolers carry the pellets through a bath of exhaust air on an endless wire mesh belt that handles pellets from 3/16" to range cube size. Variable speed drive on conveyor provides necessary speed variation for best cooling and moisture control of different size pellets. With no vertical movement of pellets and no baffle plates in cooler, ratio of fines is greatly reduced. Cooler can be suspended from ceiling or mounted on floor. Also available in two-stage superimposed coolers, delivering pellets immediately under intake of upper cooler. Built in 14, 18, 24 and 30 ft. lengths . . . capacities of 3 tons to 30 tons per hour.

Write today for complete information

Wenger Mixer Mfg. Co.
SABETHA, KANSAS Phone 111

Producers of the World's Finest Hi-Molasses Pellet Mills, Molasses and Animal Fat Mixers and Feeders

Butler

POLLYPHOS

Successful feed manufacturers know that one of their basic requirements is . . . proper contact between their purchasing agents and . . . dependable sources of supply. BUTLER CHEMICAL COMPANY affords this contact for . . . POLLYPHOS . . . to the purchasing agents of feed and mineral manufacturers located in the western half of the United States.

These same purchasing agents can always depend on the uniform high quality and stable price of POLLYPHOS . . . as phosphorus and calcium ingredients . . . in their formula feeds. Its phosphorus content is 19% or above . . . with a minimum of 32% – maximum 35% calcium and no more than 0.19% fluorine. Also . . . POLLYPHOS can be delivered to you at a low net cost.

Phone, wire or write us concerning your phosphorus needs. Let us acquaint you with the cost-cutting advantages that POLLYPHOS can provide you with . . . in bags, or in bulk, or in truck or carload lots. It will cost you nothing to find out.

Butler
CHEMICAL COMPANY

5068

Sales Division: Esperson Building
Houston 2, Texas · Phone CA 2-9711

Plant & Warehouse: P. O. Box 938, Galena Park, Texas, Phone OR 2-7587

SALES AGENTS: Warner Brokerage Co., Inc., Minneapolis; Carroll Swanson Sales Co., Des Moines; James P. Sprigg Co., Los Angeles; White Star Concentrates Co., Portland; E. A. Towns Limited, Vancouver 1, B. C.

Nutritionist Outlines Considerations in Feeding of Pullets

ST. PAUL, MINN.—Should a poultryman "full feed" or "restrict" his pullets?

The answer to this question, says Dr. Paul Waibel, poultry nutritionist at the University of Minnesota, is that the feeding system should be tailored to meet the particular strain in question.

Writing in Minnesota Feed Service, publication of the University's agricultural extension service, Dr. Waibel said he prefers a program of semi-restriction rather than severe restriction. But he said that if severe restriction is required to bring out the best in a particular strain, it is probably the thing to do.

Lack of agreement on the system to use results from several factors, he said. Among them are varying genetic backgrounds of birds and environmental conditions such as range vs. confinement rearing, temperature and season of the year.

"Certainly feed is one of the more costly items involved in producing pullets for the laying house," he said. "However, if it were possible to produce superior birds by one way or the other, a small difference in feed cost could probably be justified."

What Research Shows

Available research on the subject points out the following, he said:

1. Birds will mature and come into production at an earlier age on a high efficiency, high energy type of feeding program, compared to systems utilizing reduced nutrient intake.

2. Nutrient deficiency, such as energy restriction, will delay sexual maturity up to several weeks. This restriction may involve controlled intake of the chosen ration, or unlimited consumption of a low energy ration. Birds are restricted successfully using both systems.

3. There is a feeling, based on some recent work, that heavy broiler stock birds will benefit more from a restricted program than will the smaller, egg-producing type. This is apparently due to the increased tendency in the former to deposit excess body fat.

4. Restriction will result in more eggs of hatching size. Egg size seems to be regulated mainly by the age of the bird, rather than by the length of time in production. A delay in the start of egg production will eliminate some early pee-wee and small eggs.

5. Restricted birds weigh less than nonrestricted prior to full feeding of the laying ration. Body weight differences then disappear within a few weeks.

6. Total yearly egg production is similar, regardless of the rearing method. However, it appears that non-restricted birds may lay a few more eggs early in the year but fewer eggs late in the production year. Certain feed companies and breeders have found less mortality in the laying house when the birds have been restricted, and slightly higher yearly egg production, particularly on a hen-housed basis.

Feeding Systems

He pointed out that it is considered desirable to feed pullets a high efficiency starting feed capable of producing rapid growth for the first six or eight weeks. In some cases, cracked corn, oats or other grains are introduced along with the mash at about four weeks of age—but the amount of mash is always continuously available until the birds are eight weeks old.

After this time, there are about four possible feeding programs for replacement pullets between eight and 22 weeks of age, he said. These are high energy, medium energy, low energy-full feeding and high energy-controlled feeding.

High Energy. Fully feeding a high energy ration to growing pullets is not recommended, he said. New Jersey research indicates that pullets fed rations of high energy content gained weight faster and matured earlier but produced fewer eggs than birds on a medium energy diet. Minnesota research has shown that pullets receiving 12% added dietary fat contained nearly twice as much abdominal fat at 20 weeks as pullets receiving a medium energy ration, even though calorie-protein ratios were the same.

Medium Energy. Medium energy rations contain 15 to 25% of low energy grain and wheat by-products. Full-fed, they would retard growth and sexual maturity somewhat, would simplify the feeding program and would be fairly economical.

Low Energy-Full Feeding. Low energy-full feeding rations have 30 to 50% of a material such as oat hull which will restrict nutrient intake under full feeding. Although more economical on a per pound basis, this ration will have a higher total cost because the birds will eat much more of it, Dr. Waibel indicated.

High Energy - Controlled Feeding. High energy-controlled feeding has been used by some who feel that it is more economical to limit the intake of a high energy feed. This program has been used for many years on pasture, but more recently is used in confinement with apparent success.

Feeding Considerations

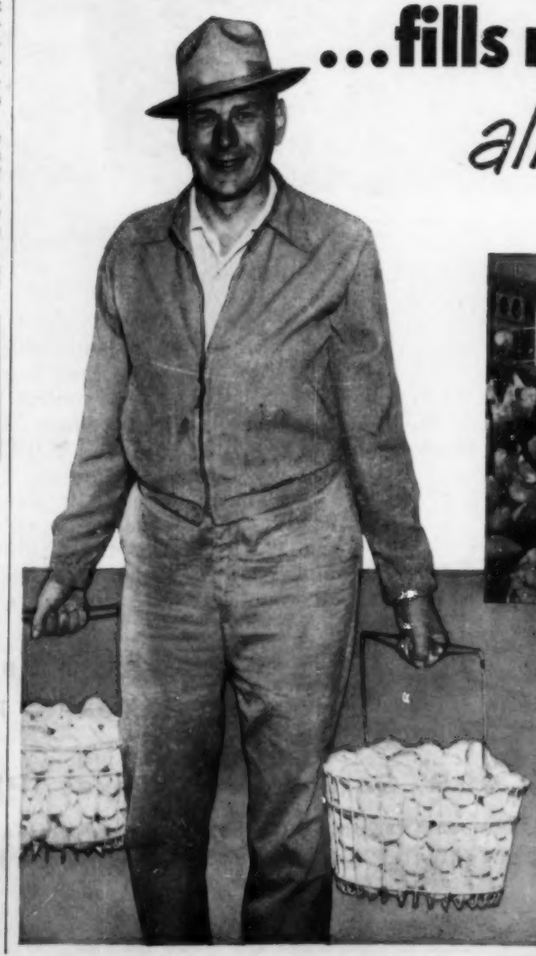
Work with other animals at Minnesota and Cornell shows that early feed restriction can increase the life span, he said.

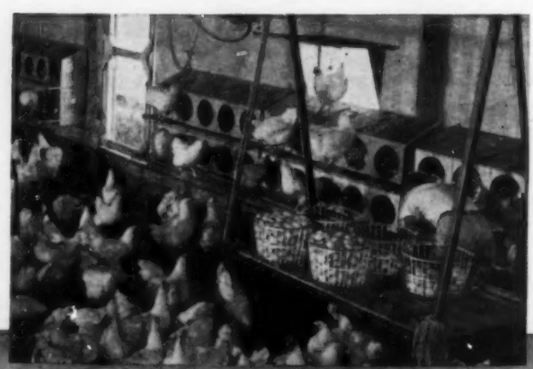
Dr. Waibel said further that pullets going into the laying house should not

SEND FOR THE NEW
ELTON CONVEYOR CATALOG
It will save money for you!
CHANTLAND MFG. CO.
Humboldt, Iowa

CANADIAN OATS
POULTRY • FEED • SEED
MIXED FEED
PROCESSED
ALL GRAINS
& BYPRODUCTS
CANADIAN SCREENINGS
FLAX AND REFUSE
GROUND AND BULK
JAMES RICHARDSON & SONS
LIMITED
ESTABLISHED 1857
14th Floor, Royal Bank Bldg.
2 King St., E. TORONTO
Head Office, Winnipeg, Canada

Arsanilic Acid in
(PRO-GEN®)
...fills more egg baskets
all-season long!





Continuous high-level egg production plus improved feed efficiency

Here is a summary of the performance of Arsanilic Acid in practical feeding tests at five leading agricultural colleges . . .

	% More Eggs	% Less Feed per doz. eggs
S. Dakota Agricultural Experiment Station	1.8% to 4.8%*	0 to 7%*
Michigan State University	5.5%	3.5%
Texas Agricultural Experiment Station	7.9%	5.9%
Colorado Agricultural Experiment Station	13.3%‡	10.8%‡
University of Arkansas	7. %†	4.6%†
	14.9%††	11.2%††

*Range of four tests. ‡Five-month test. †Four-month tests. ††Combination of 80 Gm. Arsanilic Acid plus 10 Gm. furazolidone.

be overly fat, to help avoid such problems as fatty livers and reduced resistance to heat stress. Also, heavy birds require more feed to satisfy their maintenance requirements, he said.

One disadvantage in producing extremely slim pullets, he said, was indicated by Cornell workers who found that birds receiving a restricted type program (30% oat hulls) had a lower metabolic rate than birds on a ration without oat hulls. This is why chilling is hard on restricted birds, he said. Chilling leads to the danger of crowding and smothering.

Egg Production

Dr. Waibel said that it is apparently little realized that during the short period in which a pullet matures and begins laying eggs, her weekly feed consumption increases dramatically. A pullet going from 0 to 80% production (20-oz. eggs) increases weekly feed intake from about 1.10 to 1.75 lb.

"Thus, a system of forcing the bird to eat more feed may help develop a digestive tract capable of handling more feed," he said. "Perhaps birds conditioned to greater feed intake during the growing period are better able to consume the greater amounts of feed required for egg production during periods of cold weather.

"With the available information, it seems undesirable to feed pullets on a plan which will produce extremely rapid sexual maturity and growth rate."

Of the feeding programs listed earlier in this article, Dr. Waibel said he "prefers a moderate amount of lower energy ingredients in the growing ration, thus retarding growth and maturity somewhat but not severely."

How Much Restriction?

Dr. Waibel said much research must be done on the relationship of degree of nutrient restriction upon laying house performance, but that there are a few factors which would regulate the degree of restriction desired in any flock.

One of these is breeding. It was pointed out earlier that some nutritionists feel restriction has more benefit with heavy broiler stock type birds. Beyond this, there are genetic dispositions toward fatness, Dr. Waibel said, and it is thus likely that different birds will require different programs. Also, certain egg production stocks may have an inherent tendency toward early maturity and production of small eggs.

"Therefore it is not beyond the calling of the breeder to determine for his own stock which program will be more profitable to the user of his birds," Dr. Waibel said.

A second factor regulating amount of restriction is environment. Dr. Waibel said he feels that "stimulighting" (darkening pullets during rearing) must be somewhat interrelated with feed restriction. The season of the year in which pullets are hatched has an important bearing on sexual maturity rate, he said. Birds hatched in December or January mature sooner than those hatched in June or July.

"This, we believe, results from variation in the amount of daylight at the time when the birds are in the maturing stage," he said. "Thus, retarding maturity might be more necessary during the time of the year when pullets tend to mature earlier. We urgently need more experimental work on this problem."

Disease

Since unhealthy birds frequently do not eat normal amounts of feed, Dr. Waibel suggests that the restriction program be discontinued when there is a disease in the flock.

"In conclusion, then, the feeding program for replacement pullets should be tailored to meet the requirements of the particular strain in question," he said. "It does not seem desirable to give pullets unlimited access to a high energy program, but rather to use either full-feeding of a medium energy ration or to use more extreme restriction obtained by the use of an extremely low energy feed or controlled feeding of a high energy feed."

Franklin Allen

DISTRICT MANAGER — Franklin Allen has been appointed district manager in the western region for the American Cyanamid Co. agricultural division, it was announced by B. F. Bowman, division director of marketing, New York. Mr. Allen succeeds H. H. Phillips, who was promoted to assistant regional manager. During the 12 years Mr. Allen has been with Cyanamid he has held positions in the former phosphates and nitrogen division as well as the agricultural division. He is a business administration graduate of Colgate University. He lives in Sacramento, Cal.

your laying feeds

...makes re-sale easier

all-season long!

Full egg baskets and the satisfied smile of your customers are the key to repeat sales on laying feeds.

For less than 40¢ per ton of complete laying feeds, Arsanilic Acid is proving to many feed manufacturers that it is a reliable aid to . . .

- continuous high-level egg production
- improved feed efficiency
- improved hatchability among breeding flocks
- improved feed sales

Arsanilic Acid can help your laying feeds meet the challenge of stresses and sub-clinical diseases that cause slumps in egg production . . . economically, too! (As laying flocks become larger and larger . . . and floor space per bird becomes smaller . . . this will become even more important).

Practical field tests at five leading Agricultural Colleges show that Arsanilic Acid increased egg production from 1.8% to 13.2%. Even at the lowest level of gain, this increase in egg production would net your customers 30 to 40 dozen more eggs per year from each 100 hens.

Arsanilic Acid in layer and pullet feeds gives outstanding results because of its low-cost and proved effectiveness. Plan now to take full advantage of this low-cost growth and production stimulant in 1959 in your Complete Breeder or Layer Feeds . . . Pullet Developer and Growing Feeds . . . Supplements or Concentrates . . . and Trouble Shooting Feeds.

New Technical Information Folder Available

For complete details on the value of Arsanilic Acid in Laying Feeds, including research and field tests, a new technical folder has been prepared for you. Ask for Bulletin No. 402—PRO-GEN® (Arsanilic Acid) for Pullet and Laying Feeds.

Arsanilic Acid
(PRO-GEN®)
a product of Abbott LABORATORIES
CHEMICAL SALES DIVISION, NORTH CHICAGO, ILLINOIS
IN CANADA: 1350 Cote De Liesse Road, Montreal 9, Quebec

PRO-GEN®
ARSANILIC ACID ADDITIVE
Get it in the Midwest from
Carroll Swanson Sales Co.
Box 1034, University Place Sta.
Tel. CR 9-8881 Des Moines 11, Iowa

Triumph
CORN SHELLERS
CLEANERS and COB BLOWERS
for GRAIN ELEVATORS and FEED MILLS
WRITE FOR FULLY DESCRIPTIVE CATALOG
THE C. O. BARTLETT & SNOW CO.
6249 HARVARD AVE. • CLEVELAND 5, OHIO

midwest
alfalfa
can
supply
your
dehydrated
alfalfa
needs on a
year-round
basis

ask for and get

GREEN
BANNER
DEHY

midwest
alfalfa
blenders
INC.

THE RANCH MART
95th and Mission Road
Prairie Village 15, Kansas

PHONE KANSAS CITY
MItchell 9-0386

WHITMOYER STUDENTS—Feed men, hatcherymen and others associated with the poultry industry are pictured here as members of a class which attended the 77th Poultry Health and Nutrition School conducted by Whitmoyer Laboratories, Inc., Myerstown, Pa. The group includes (left to right):

First row—Wilho J. Myllymaki, United Co-op Farmers, Fitchburg, Mass.; Arne Arnio, United Co-op Farmers, Moosup, Conn.; Daniel Pikkarainen, United Co-op Farmers, Westminster, Mass.; Archie Fedden, poultry farmer, Strathroy, Ontario; James S. Peiffer, Midway Mills, Lebanon, Pa.; Clarence Nelson Lee, Southern States Feed Service, Singers Glen, Va.; James Pilkington, Pilkington Poultry Farm, Mt. Bridges, Ontario; and Fred Dickens, Grandone, Inc., Needham, Mass.

Second row—Victor J. Denlinger, Lancaster County Farm Bureau, Quarryville, Pa.; LeRoy S. Horst, David B. Hurst, Bowmansville, Pa.; Charles A. Roy, William Stone Co., Brantford, Ontario; Lester L. Winters, Lancaster County Farm Bureau, Strasburg, Pa.; Eugene Lester, Kelly Feeds, Inc., Timberville, Va.; Dave Bowker, F. W. Bray, Ltd., Toronto, Ontario; Lee Flanders, Mercer Milling Co., Baldwinsville, N.Y.; Brown Shipe, Beacon Milling Co., Broadway, Va.; Bobby J. Hayes, Cotton Producers Assn., Boaz, Ala.; Roy Shirley, Whitmoyer Laboratories of Dixie, Inc., Albertville, Ala., and Tom Bell, Wayside Feed Service, Nevada, Ohio.

Third row—Kurt Schatzmann, Frey & Co., Flawil, Switzerland; Houston Trussler, Jr., John W. Eshelman & Sons, Vinton, Va.; Fred Galmish, John W. Eshelman & Sons, Amherst, Va.; Bob J. Waldroup, Hayesville Milling Co., Hayesville, N.C.; Carlisle Staley, Siler City Mills, North Wilkesboro, N.C.; Stewart McDonald and D. Oswald Freeman, both of Hy-Line Chicks, Chatham, Ontario; Tom Graham, Hy-Line Chicks, St. Marys, Ontario; Douglas White, Arkona Feed Mills, Inc., Arkona, Ontario; Bruce Babcock, Babcock Hatchery, Inc., Lititz, Pa.; Derl Kauffman, D. A. Stickell & Sons, Rebuck, Pa.; Joseph Lutz, Cumberland Valley Co-op, Chambersburg, Pa.; R. S. Keith, Babcock Hatchery, Inc., New Oxford, Pa.; Robert J. Decker, Babcock Hatchery, Inc., Milford, N.J.; Ray Mease, Hayesville Milling Co., Hayesville, N.C., and Stewart Simpson, Simpson Poultry Farmer, Glencoe, Ontario.

Fourth row—H. Glenn Stauffer, Rufus S. Miller Hatchery, Bainbridge, Pa.; George Comrie, William Stone Co., London, Ontario; Marvin L. Leatherman, Hubbard Farms, Raleigh, N.C.; William M. Durboraw, Hubbard Farms, York, Pa.; Thomas D. Scanlan, Whitmoyer International, Ltd., Lebanon, Pa.; Frank N. Manwaring, Manwaring Leghorn Farm, Mentone, Ind.; Theodore J. Speyer, John W. Eshelman & Sons, Glenmont, N.Y.; Paul J. Grady, Beacon Milling Co., Harrisonburg, Va.; Victor W. Holtzapple, Holtzapple Kimberchiks, Elida, Ohio; John W. Backensto, Moyer's Hatchery, Zionsville, Pa.; S. L. Shanaman, Jr., Shanaman, Inc., Honey Brook, Pa.; Russell A. Mease, Babcock Hatchery Inc., Manheim, Pa.; John A. Gow, Whitmoyer Laboratories, Ltd., Rosedale, Toronto, Ontario; Fred Wright, Exeter District Co-op, Exeter, Ontario, and Elmer M. Wheeler, United Co-op Farmers, Milford, N.H.

Integration Speeds Up Research, Distribution Changes, Speaker Says

ITHACA, N.Y. — Integration was credited here with "speeding up research and hastening the application of research results" by E. H. Fallon, general manager of the Cooperative G.L.F. Exchange, Ithaca.

Speaking at the recent annual Cornell University Farm and Home Week on a panel dealing with integration, Mr. Fallon said: "The desire for increased efficiency in broiler growing led to a great deal of research on breeding and nutrition, with great advances in these fields. The kind of changes in our distribution pattern which we are already experiencing will also be speeded up under integration."

He referred to such things as bulk service, mill-to-farm, bypassing "all unnecessary steps both in processing and marketing" and a continued reduction in the number of small retail points.

Integration also provides a source for capital, he pointed out. He said the need for capital is growing by leaps and bounds, and the farmer who wants to get ahead—especially the young farmer—may find himself strapped for money.

"Money is very important in integration and in some cases it is the key factor," Mr. Fallon said. "The regular lending agencies can't always meet the farmer's needs. Commercial firms sometimes can and will."

The G.L.F. executive also sees "real possibilities for volume building in integration. You tend to get a large block of business in a single transaction, and get it nailed down for a long time. This means relatively low sales cost." He said part of the costs of integration can be offset by this cut in sales cost.

Mr. Fallon pointed out that management help or supervision is important in integration. He said: "Both the farmer and the integrator need it."

REVENUE PRODUCER

PORTLAND, MAINE — Poultry feed was the third largest freight revenue producer for the Maine Central Railroad during 1958, it has been reported by railroad officials here. The feed accounted for 8.3% of freight revenue, and was exceeded only by paper, in top place with 22%, and potatoes, in second place with 10.6%.

STILL ON THE ADVANCE...
THE B&L COMPLETE MOBILE FORMULA FEED BLENDER
Offering Unmatched Maneuverability and Ease of Operation!

B&L

Here's the modern mobile feed plant that grinds, mixes, and blends — produces any formula feed right at the barn door. It carries a full day's supply of molasses and supplement, and features micro-ingredient supplement and medicant mixing . . . high speed molasses blending. Top quality feeds from farm grains and roughages.

STANDARD EQUIPMENT ON THE B&L FORMULA FEED BLENDER—
The first practical mobile baled hay grinder grinds round and square bales with equal ease.

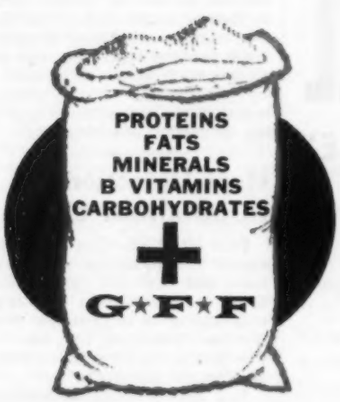
• GRINDS WHOLE BALES WITH NO EFFORT • LARGE FEED TABLE — 30" ABOVE GROUND • POWER DRIVEN GATHERING FINGERS • VARI-SPEED FEED DRIVE • COMPLETELY ENCLOSED WHEN NOT IN USE • NO EXTRA POWER NEEDED • UTILIZES FULLEST EQUIPMENT EFFICIENCY

BACKED BY MORE THAN 100 YEARS EXPERIENCE IN FEED AND GRAIN PROCESSING MACHINERY

BARNARD & LEAS Manufacturing Company INC.

1219 Twelfth Street S.W. EMpire 5-1481 Cedar Rapids, Iowa

"What You Need is a Balanced Diet With Distillers Feeds + G★F★F★"



GETTING piglets off to the right start and *keeping them healthy* is the most important stage of the feeding cycle. The best possible start is a balanced diet containing Distillers Feeds with GFF . . . naturally rich in proteins, minerals, fats, B-vitamins and Grain Fermentation Factors★—produced by yeast action in the grain distillers fermentation process, and present *only* in Distillers Feeds.

Give your customers the best—include Distillers Feeds in the rations you sell—a little bit does so much!

Contact your favorite supplier.

★ **GRAIN FERMENTATION FACTORS:**

unknown growth factors found exclusively in Distillers Feeds.

Write for Booklet, "Feed Formulations with Distillers Feeds". It's FREE!

DISTILLERS FEED RESEARCH COUNCIL

1232 Enquirer Building, Cincinnati, Ohio

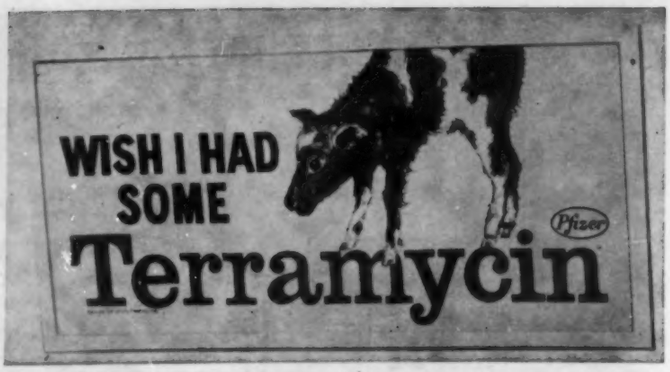
James B. Beam Distilling Co., 65 East South Water St., Chicago 1, Ill. ★ Brown-Forman Distillers Corp., P. O. Box 1080, Louisville, Ky. ★ Double Springs Distillers, Inc., 70 Scollay Square, Boston 8, Mass. ★ Fleischmann Distilling Corp., 625 Madison Ave., New York 22, N. Y. ★ Glenmore Distilleries Co., P. O. Box 900, Louisville, Ky. ★ Grain Processing Corp., 1600 Oregon St., Muscatine, Ia. ★ Kentucky River Distillery, Inc., Brook & Eastern Parkway, Louisville 8, Ky. ★ Medley Distilling Co., P. O. Box 548, Owensboro, Ky. ★ Merchants Distilling Corp., 1 North La Salle St., Chicago, Ill. ★ Midwest Solvents Co., Inc., 1300 Main St., Atchison, Kan. ★ Mr. Boston Distiller, Inc., 1010 Massachusetts Ave., Boston 18, Mass. ★ National Distillers Products Co., Grain Products Sales, 99 Park Ave., New York 16, N. Y. ★ Schenley Distillers, Inc., 26 E. Sixth St., Cincinnati 2, Ohio ★ Jos. E. Seagram & Sons, Inc., 7th St. Road, Louisville, Ky. ★ Stitzel-Weller Distillery, Inc., Sta. D, Louisville, Ky. ★ Hiram Walker & Sons, Inc., Peoria 1, Ill.

NEW **PACAL HAMMER**
holds 50% more tungsten-carbide

Note the Serrated Edge Design* on the PACAL Hammer at left. You get 50% more tungsten-carbide on the working surface. New PACAL Hammers sharpen as they wear, hold their edge, cut cleaner. Last 25% longer than ordinary hard-faced hammers. Call or write the Hammer Division.

*Patent Applied For
All Steel Furnished by Pacal Made in U.S.A.

PAPER, CALMENSON & CO.
County Road B & Walnut St., St. Paul 13, Minn., Telephone: Midway 6-9456



BILLBOARD SERIES LAUNCHED—Starting this spring, Chas. Pfizer & Co., Inc., has introduced a new series of animal health posters utilizing billboards in the Midwest and other important farm areas. One of the posters is shown here.

Pfizer Billboard Series Stresses Animal Health

NEW YORK—A series of billboard posters which is to appear along highways in 400 counties in the Midwest and other important farming areas was launched recently by the agricultural division of Chas. Pfizer & Co., Inc.

The series is an outdoor animal health promotion which will carry the message—"Wish I Had Some Terramycin."

The colored billboards will change with the seasons. In the spring, the periodically rotating posters will present larger-than-life-size pictures of a baby chick, a pig and a dairy calf. This summer, a laying hen in heat stress, a sweltering shoat, and a beef cow licking her newborn calf will be featured. Next fall the billboards will picture a feeder calf in snow, a dairy cow in cold weather and a pig caught in the rigors of winter. The animals will be saying, "Wish I had some Terramycin."

Spokesmen for Pfizer say "the simplicity and impact of the posters will make the outdoor series a valuable aid for feed manufacturers and for dealers who sell feeds containing the antibiotic or who carry animal health products which include Terramycin."

Miniature billboard replicas of the farm animals displayed on the billboards will appear in local retail stores across the nation as part of the feed and animal health advertising.

A POINT TO REMEMBER

PILOT BRAND OYSTER SHELL

HELPS YOU AND YOUR CUSTOMERS MAKE MORE MONEY

Poultry raisers know that PILOT BRAND helps them get more high quality eggs with stronger shells . . . the kind that bring top prices in the market.

Alert dealers, aware of the steady profits PILOT BRAND gives them, stock and display this best seller all of the time. And national advertising in leading farm journals and on 70 key radio stations is constantly increasing the demand for PILOT BRAND.

It's good, profitable business to push PILOT BRAND Oyster Shell . . . the largest selling, finest quality eggshell material in the world.

PILOT BRAND OYSTER SHELL FOR POULTRY

Oyster Shell Products Company
Mobile, Alabama

Plastic Poultry House Studied in Kentucky

QUICKSAND, KY.—What effects the use of plastic poultry houses may have on egg production and feed efficiency is the subject of a University of Kentucky study now under way at the Robinson Agricultural Experiment Substation here.

A house 30 by 60 ft. with truss-type roof-framing has been built of plastic materials in the study.

The type of construction that might be best suited for poultry and the method of application of plastics for best results are being investigated. Since housing represents the largest single cost factor in commercial poultry, this "cheap" house, which cost less than the conventional type building, is getting consideration.

Heat Detection Installations Continue

DES MOINES—The continuing increase in installations of heat detection units by U.S. grain handling firms is indicated in a recent announcement of installations made by Hot Spot Detectors, Inc., Des Moines. The firm is the electronics subsidiary of Neptune Meter Co.

Hot Spot reports 78 installations in 17 states as follows: Kansas, 21; Oklahoma, 13; Texas, 11; Nebraska, nine; Iowa, four; Minnesota, four; Illinois, three; Missouri, two; South Dakota, two; Oregon, two, and one each in Indiana, Ohio, Louisiana, Colorado, Arizona, Wisconsin and North Carolina.

Animal Nutrition and Feed Production Consultant
C. W. SIEVERT
Room 855—141 W. Jackson Blvd.
Phone Webster 9-3256 Chicago 4, Ill.

Ontario Groups See Problems in Growing Poultry Production

TORONTO—Increased broiler and turkey production and correspondingly lower price levels in Canada are problems which feed men and related groups consider serious and need corrective attention.

A bulletin of the Ontario Retail Feed Dealers Assn. recently stated, "From the information which was presented for consideration by (Ontario Poultry) Council members, it is clearly evident that we are headed for an extended period of over-production and consequent below cost of production price levels . . . It is perfectly ridiculous to imagine that such increases can be absorbed in the available market channels without having a devastating effect on the price structure for poultry products."

This statement referred to an appeal to Canada's poultry meat industry "to put its house in order" made at a recent meeting of the council, which "found no justification for current increases in broiler and turkey production."

The appeal, according to the council, was directed mainly at broiler contractors, feed credit managers and the banks backing them. "A bleak future is forecast for broiler and turkey growers, if present placement rates continue," said the council.

Egg Settings Up

The Ontario Retail Feed Dealers Assn. reported that all Canada egg settings, for chicken broiler production, show a 31% increase for the first two months of 1959 as compared with the same period last year. During 1958, Ontario marketed some 75,000 turkey broilers each month, and 190,000 birds are in prospect for April this year, according to the association.

The Ontario Poultry Processors Assn. contends that the turkey industry is in an "extremely dangerous situation and persons responsible for the extension of credit in the growing and marketing of these birds are going to suffer severe financial losses."

"In addition to this threat of overproduction within its own ranks," said the feed dealers association, "the poultry industry is running headlong into real competition from the red meat section, particularly from pork products."

Further comments from the association's bulletin: "This is certainly not the time for complacency or indifference toward a situation which could spell disaster for anyone who may find himself overextended in backing some poultry operation. No industry can survive for any length of time unless production costs can be recovered from market return.

"This 'share-the-loss' guaranteed profit, easy credit philosophy has run its course and, unless some reasonable relationship between production and market requirements can be brought into being, many well intending people will be found in deep financial difficulty.

"We can no longer safely rely on the 'other fellow' to effect the necessary cutbacks. The problem is industry-wide and the solution dependent upon every member thereof assuming a state of personal responsibility toward the restoration of sensible production programming."

Canadian Millfeeds Production Reported

WINNIPEG—Canadian mills produced 345,423 tons of millfeeds during the first six months of the present crop year, compared with 344,421 in the same period a year ago. Exports were down, but domestic disappearance increased. The figures were released in the February issue of Coarse Grains Quarterly.

The production total for the August-January period was made up of 143,020 tons bran; 157,829 shorts and 44,574 middlings. Revised figures for the initial six months of the previous crop year placed bran production at 153,279 tons; shorts 154,714, and middlings 45,428.

Incomplete returns to the end of January this year show imports at 1,779 tons compared with only 665 tons for the corresponding period last year. On the other hand, exports for the six months were down to 36,655 tons from the 52,309 exported in the same months of the 1957-58 crop year. Domestic disappearance, however, climbed to 309,002 tons from August to January, inclusive. The comparative figure a year earlier was 293,508 tons.

COLUMBIA
SOFT PHOSPHATE
IMMEDIATE DELIVERY
LOW COST
WRITE FOR INFORMATION
Columbia Phosphate Co.
1001 Washington St. Louis, Mo.
COLUMBIA PHOSPHATE CO.
PHOSPHATE PRODUCTS

DEHYDRATED
and
SUN-CURED
ALFALFA MEAL
Pellets • Crumbles
Bagged • Bulk
THE A. B. CAPLE CO.
Toledo 5, Ohio

Gives you 3 ingredients in 1!

Important milk nutrients! Real cheese for appetite-sharpening aroma and flavor! Essential vitamin fortification! Peebles' new DDF gives you all three at lower cost.

DDF is a specially balanced dog food premix that blends these important product features into one convenient package. It can be incorporated easily into any type of dog food—dry, wet or biscuit.

DDF saves you money by reducing your ingredient inventory needs...doing away with more expensive single item purchases from a variety of sources. Just add DDF at a 5% level to your present formula to get milk solids, cheese and vitamin benefits. Uniform texture assures even distribution in mixing.

Find out how you can use Peebles' new DDF in your dog food. For complete information and sample, wire or write: Department 45A.

WESTERN CONDENSING COMPANY
APPLETON, WISCONSIN
World's Largest Producer of Whey Products
32 PLANTS Coast to Coast

Aeroglide® Grain Driers

Lowest First Cost
Lowest Installation Cost
Lowest Operating Cost

WRITE — WIRE — PHONE TODAY
for Free folder without obligation

Aeroglide Corporation
510 Glenwood Ave.—Raleigh, N. C.

11250A

★ Buy and Sell Through WANT ADS ★

USDA Outlines Protein Ingredient Price Outlook

WASHINGTON — Prices of soybean meal, meat meal and tankage have been declining in recent months and probably will continue below the same period of 1958, according to the U.S. Department of Agriculture's April Feed Situation report.

However, it was noted in the report that prices of high-protein feeds were generally higher this past winter than in the same period of 1957-58.

The price of cottonseed meal remained a little higher than a year earlier in late March, while linseed meal was much higher. Alfalfa meal prices have advanced sharply in the past year, averaging 50% higher in the last half of March than a year ago.

Prices of feed grains and by-product feeds in March generally averaged near the level for March, 1958. Prices of feed grains have been comparatively stable since January, though there has been some strengthening in corn prices.

In late March, corn prices at Chicago were a little higher than a year earlier, while market prices of oats and barley were a little lower.

Corn Prices

Corn prices are not expected to advance during the next few months as they did in 1958, and probably will average lower during the April-September period this year than last. Prices of oats, barley and sorghum grain also may average somewhat lower this spring and summer than last. Another favorable growing season and the lower support rates for the 1959 crops would be expected to result in at least the usual seasonal decline in prices of these three grains at harvest time.

Domestic consumption of oilseed meal totaled around 5,450,000 tons during October-February, 15% more than in the same period of 1957-58, as increased production this year has gone largely into domestic feeding and exports.

Production of the five oilseed meals totaled 5,696,000 tons during the five-month period, 17% more than in the same period in 1957-58. Imports also have been higher, totaling about 70,000 tons during October-January, 30,000 more than a year earlier.

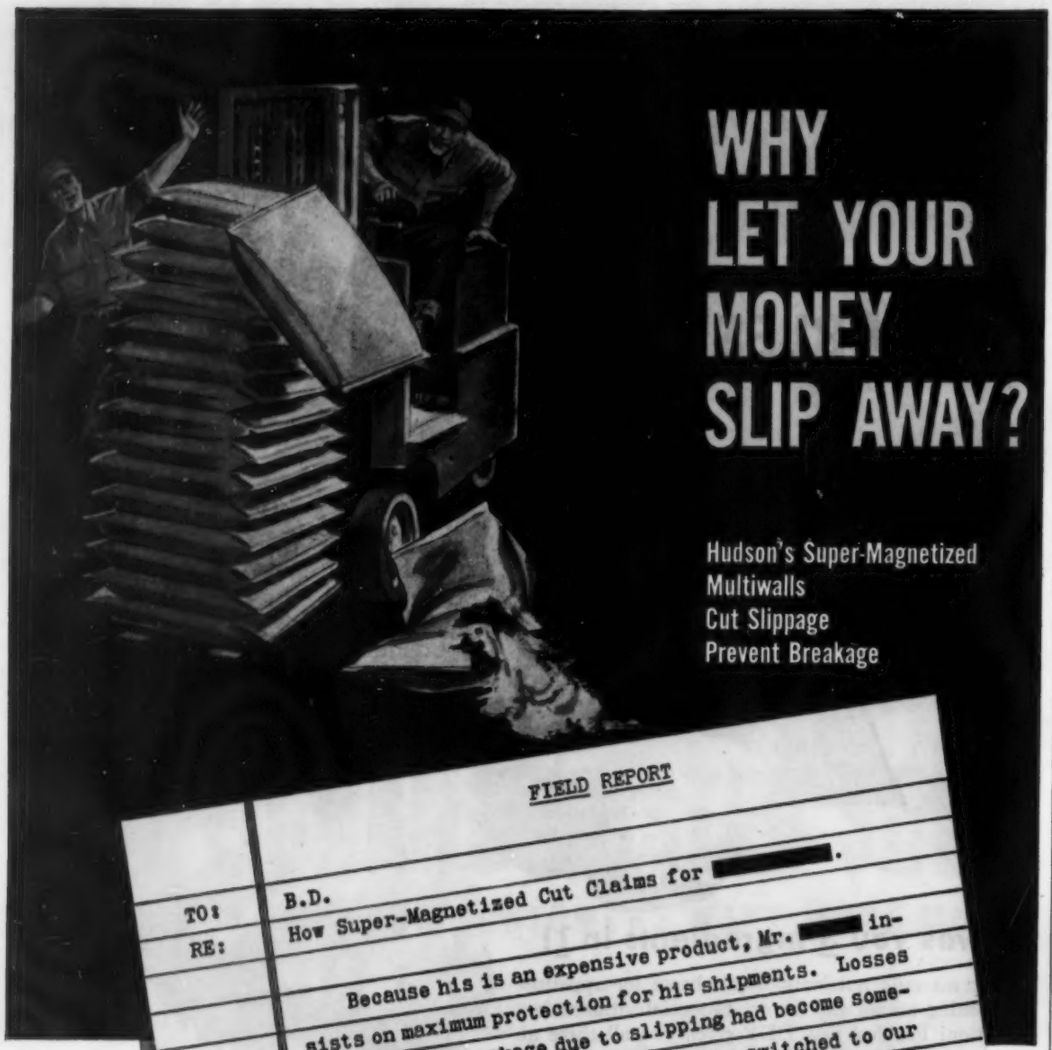
Soybean Meal Production

Production of soybean meal during October-February totaled 4,065,000 tons, 21% more than a year earlier. Increased domestic use and exports took most of this increased production, with stocks increasing about 40,000 tons from Oct. 1 to March 1, when they were a little above those of a year earlier. Domestic use of soybean meal, estimated at about 3,775,000 tons for the five months, was up 19% from a year earlier.

Production of soybean meal for the entire feeding year is expected to total 9.4 million tons, 1.1 million more than in 1957-58. Production of cottonseed meal was up 8% during this period, while that of linseed meal was slightly lower. Domestic use of cottonseed meal was 10% greater, while a little less linseed meal was consumed domestically. March 1 stocks of both cottonseed and linseed meal were substantially smaller this year than last.

FLORIDA PULP CONSUMPTION

Cattle in Florida consumed 206,000 tons of citrus pulp in the 1957-58 season.


WHY LET YOUR MONEY SLIP AWAY?
Hudson's Super-Magnetized Multiwalls
Cut Slippage
Prevent Breakage
FIELD REPORT
TO: B.D.
RE: How Super-Magnetized Cut Claims for [redacted].
Because his is an expensive product, Mr. [redacted] insists on maximum protection for his shipments. Losses through sack breakage due to slipping had become something of a phobia with him. Since he switched to our Super-Magnetized Multiwalls he has not had a single claim arising from slippage.
Actual cash savings have far and away absorbed our upcharge for these bags. He also reports an improvement in customer good will.
Hudson Bags increase your sales — cut your costs!
HUDSON MULTIWALLS

for further information write:
HUDSON PULP & PAPER CORP.
477 Madison Avenue • New York 22, N. Y.

Plants at Pine Bluff, Ark. • Palatka, Fla. • Wellsburg, W. Va.

WESTERN

LIVE YEAST CULTURES
For 28 Years a Proven and Dependable Source of
ENZYMES
FOR ACTION ON GRAINS
UNIDENTIFIED GROWTH FACTORS
NATURAL B COMPLEX VITAMINS
Better assimilation — Lower feed cost
VIABILITY GUARANTEED
These Active Factors Can Be Added to
YOUR FEEDS
At Little or No Extra Cost
You will be hearing more and more about Enzymes in nutrition. Why not have them in your feeds now?
Write
WESTERN YEAST COMPANY
Chillicothe Illinois

Products of Progress

Coronet Defluorinated Phosphate (CDP)

NATIONAL ALFALFA MEAL

DRIED WHEY PRODUCT

CYANAMID AUREOMYCIN® PRODUCTS

DOW METHIONINE

SMITH'S Lifeline Menhaden FISH MEAL

GRAN-I-GRIT

SERVALL STAZDRY your best litter buy

EGG SHELL BRAND pure reef OYSTER SHELLS

ANIMAL and PLANT HEALTH PRODUCTS

CYANAMID ACCONOX® ANTIOXIDANTS

THE FOX CO.

NEWFIELD, NEW JERSEY

OXford 2-4400

BROADWAY, VA., and SELBYVILLE, DEL.

® Trademark of American Cyanamid Co.

DOW | FEED ADDITIVES

Looks
like
everybody
wants

DOW METHIONINE

No wonder! It helps formulators keep finished feed costs in line . . . lets them take advantage of good buys in ingredients, and supplement with highly concentrated synthetic methionine. That's why we're selling more methionine than ever . . . and we can still deliver promptly anywhere!

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

Convention Calendar

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear ahead of the ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

• • •

March 7-8—Grain & Feed Dealers National Assn.; Hotel Muehlebach, Kansas City; sec., Herbert L. Sharp, 400 Folger Bldg., Washington 5, D.C.

June 8-12—Feed Microscopy Short Course; Missouri College of Agriculture, Columbia, Mo.; sponsored by Missouri College of Agriculture and Missouri State Department of Agriculture; chm., G. M. Barnhart, chief chemist, State Department of Agriculture, Jefferson City, Mo.

• • •

April 21-22 — Grain Dealers Management Conference; University of Illinois, Urbana; conference supervisor; 116C Illini Hall, Champaign, Ill.

April 23-25—California Hay, Grain & Feed Dealers Assn.; Fairmont Hotel, San Francisco; sec., John F. Gilmore, Blue Anchor Bldg., Sacramento, Cal.

April 24—Washington Beef Cattle Day; Washington State College, Pullman, Wash.

April 24-25—Joint Convention, Texas dealer and manufacturer groups; Hotel Texas, Ft. Worth—Texas Grain & Feed Dealers Assn.; sec., Ben M. Ferguson, 614 Meacham Bldg., Ft. Worth; Texas Feed Manufacturers Assn., sec., Ben. E. Schmitt, 3421 Park Ridge Blvd., Ft. Worth.

April 24—Indiana Cattle Feeders Day; Purdue University, Lafayette, Ind.; chm., Dr. W. M. Beeson, Department of Animal Science, Purdue University.

April 27-29—American Association of Feed Microscopists; Hotel Lincoln Douglas, Quincy, Ill.; sec., G. M. Barnhart, Missouri Dept. of Agriculture, Jefferson City, Mo.

April 30-May 2—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., O. E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

May 8-10—Grain Processing Machinery Manufacturers Assn.; Chicago; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

May 10-12 — National Cottonseed Products Assn.; Mark Hopkins and Fairmont Hotels, San Francisco; sec., John F. Moloney, 43 N. Cleveland St., Memphis, Tenn.

May 11-13—American Feed Manufacturers Assn. Convention and Na-

Customers ask for... KASCO®
because their dogs go for Kasco!

The Natural Dog Food!

Profit opportunities for you!
Every dog owner knows the famous Kasco name—knows Kasco quality. Kasco Dog Food brings you new opportunities for bigger volume and faster turnover . . . a greater profit potential because of the loyalty of Kasco customers to this outstanding product.

Satisfaction for your customers!
A pleased customer is a repeat customer. And Kasco gives your customers more of what they want in a dog food—top condition for their dogs at a lower cost per serving.

"Service" help for you!
Kasco maintains a "professional" sales force to work with you—for you in giving service to your customers. You are free to call on these men at any time.

KASCO DOG FOOD
CORN PRODUCTS COMPANY

CALENDAR FOR 1959-60

APRIL

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

MAY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

JUNE

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

JULY

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

AUGUST

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

SEPTEMBER

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

OCTOBER

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

NOVEMBER

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

DECEMBER

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

JANUARY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

FEBRUARY

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29					

MARCH

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

tional Feed Industry Show; Conrad Hilton Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

May 15-16—Missouri Grain, Feed & Seed Assn.; Hotel Governor, Jefferson City, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

May 25—Des Moines Feed & Grain Club Field Day; Des Moines Golf and Country Club; ticket chairman, Curtis Twedt, Spencer, Kellogg & Sons, Inc., 119 S.E. 3rd, Des Moines, Iowa.

May 27-28—North Carolina Poultry Field Day; North Carolina State College, Raleigh; chm., Dr. E. W. Glazener, Poultry Department.

June 1-2—Central Retail Feed Assn.; Hotel Schroeder, Milwaukee; sec., Eldon H. Roesler, 1712 W. St. Paul Ave., Milwaukee, Wis.

June 7-9—Indiana Grain & Feed Dealers Association; Sheraton Hotel, French Lick, Ind.; sec., Fred Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 7-9 — Eastern Federation of Feed Merchants, Pocano Manor Inn, Pocano Manor, Pa.; sec., Austin W. Carpenter, Sherburne, N.Y.

June 8-10—Alabama Poultry Industry Assn.; Municipal Auditorium, Birmingham; exec. sec., W. L. Walsh, P.O. Box 567, Montgomery, Ala.

June 9—Northeastern Poultry Producers Council Egg Quality and Grading School; University of Massachusetts, Amherst; mgr., Dr. Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

June 9-10—Association of Southern Feed and Fertilizer Control Officials; Velda Rose Motel, Hot Springs, Ark.; sec., Maurice B. Rowe, Virginia Dept. of Agriculture, 1123 State Office Bldg., Richmond, Va.

June 25-27—Delmarva Chicken Festival, Dover, Del.; Dave Green, 1102 S. State St., Dover, Del.

June 25-27—Canadian Feed Manufacturers Assn.; Bigwin Inn, Lake of Bays, Ontario; N. D. Hogg, Box 66, Station Q, Toronto, Ont.

June 25-27 — Delmarva Chicken Festival; Dover, Delaware; sec., J. Frank Gordy, Delmarva Poultry Industry, Inc., R.F.D. No. 2, Box 47, Georgetown, Del.

July 10-14—Georgia Feed Assn.; General Oglethorpe Hotel, Savannah,

NOW..! LOAD or UNLOAD BULK FEED
with the PAMCO BACK SAVER

Attach this inexpensive AUGER UNIT to a grain box and you can handle any feed in bulk!

- Ideal for hoist trucks
- Complete hydraulic operation
- Can load as easily as unload
- Will handle bulk feed grain or pellets
- Minimum breakage of pellets

Conversion units can be mounted on your present grain box.

For Complete Information Write:

PRODUCTIVE ACRES MFG. CO.
406 BROADWAY KEOTA, IOWA PHONE: ME 63071
OTHER INSTALLATION POINTS: Englewood, Colo.; East Grand Forks, Minn.; Mooresville, Indiana; Portland, Oregon; Jefferson, Georgia; Tulsa, Oklahoma

Rigid laboratory control ends trace-mineral worries

Lime Crest TRADE MARK BRAND

All Lime Crest trace-mineral pre-mixes, both standard and custom made, are under rigid laboratory control. That control begins with the ingredients and doesn't end until the final product has been checked.

Because of Lime Crest's complete laboratory control (both chemical and spectrographic methods are used) the feed manufacturer who uses Lime Crest trace-mineral pre-mixes need not worry that his feeds contain too little or too much of the trace minerals his nutritionist has specified.

LIME CREST TRACE-MINERAL PRE-MIXES
Made by LIMESTONE PRODUCTS CORPORATION OF AMERICA, NEWTON, NEW JERSEY
World's Largest Producer of Crystalline Calcite Products
CANADIAN DISTRIBUTOR: The Ash Chemical Co., 353 St. Nicholas St., Montreal 1, P. Q.

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

NELLIS
FEED COMPANY
Brokers
of Feed Ingredients
4010 Board of Trade Bldg.
WAbash 2-7322 Chicago 4, Ill.
TWX 623

cobalt

AGRICULTURAL CHEMICALS

for prompt shipment

Cobalt Carbonate
Cobalt Sulfate
Cobalt Sulfate Monohydrate
Cobalt Nitrate
Cobalt Chloride

write
for this 24 page booklet furnishing information on

	PAGE
Essential Trace Elements in Plant & Animal Nutrition	5
Trace Mineral Compounds	9
Fungicides	12
Weed Killers	14
Miscellaneous Agricultural Compounds	15
Available Literature	16
Supplementary Reading	16

THE HARSHAW CHEMICAL CO.
CLEVELAND 6, OHIO
Chicago • Cincinnati • Cleveland • Detroit • Hastings-On-Hudson
Houston • Los Angeles • Philadelphia • Pittsburgh

AMERICAN ELEVATOR & GRAIN DIVISION
Russell-Miller Milling Co.
P.O. Box 157, Buffalo, N. Y., Phone MAdison 0007, Teletype BU 550
SHIPPERS CARLOAD LOTS—CHOICE WHEAT, CORN, OATS, BARLEY
TERMINAL ELEVATORS AT
BUFFALO New York — **DULUTH** Minnesota — **MINNEAPOLIS** Minnesota

Ga.; sec., Will L. Kinard, 2240 Peachtree Rd. Bldg., Atlanta 5, Ga.

July 21-23—American Poultry Congress and Exposition; Kiel Auditorium, St. Louis, Mo.; exec. sec., Don M. Turnbull, American Poultry and Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

Aug. 3-8—Feed Microscopy Short Course; Texas Agricultural Experiment Station, College Station; chm., E. E. Brown, Asst. State Chemist.

Aug. 4-7 — Poultry Science Assn. (meeting for members and executive committee invited guests only), Iowa State College, Ames; chm., Dr. Robert E. Phillips, poultry department, Iowa State College.

August 7-8—North Carolina Feed Manufacturers Assn.; Ocean Forest Hotel, Myrtle Beach, S.C.; sec.-treas., A. M. Upshaw, Jr., North Carolina Feed Manufacturers Assn., Box 44, Mocksville, N.C.

Aug. 11-12 — Wisconsin Nutrition School; Memorial Union, University of Wisconsin, Madison; chm., Dr. Robert H. Grummer, Dept. of Animal Husbandry, University of Wisconsin.

Aug. 17-18—Kentucky Feed Conference, sponsored by University of Kentucky and Kentucky Feed & Grain Assn.; Brown Suburban Hotel, Louisville; sec., Jack Weber, P.O. Box 425, Lexington, Ky.

Aug. 23-25—Poultry Industries of Louisiana, Inc.; Captain Shreve and Washington Youree Hotels, Shreveport; sec., Clyde Ingram, Louisiana State University, Baton Rouge, La.

Aug. 23-25 — The National Hay Assn.; Sir Francis Drake Hotel, San Francisco; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

Sept. 9-10 — Pet Food Institute, Drake Hotel, Chicago; sec., Clyde Kassens, 5325 Michigan Ave., Chicago, Ill.

Sept. 9-10 — Maryland Poultry Service Conference; University of Maryland, College Park; chm., Wade H. Rice, University of Maryland, College Park, Md.

Sept. 13-14—Grain and Feed Dealers National Assn. (work meeting for directors, committees and members), Minneapolis; exec. vice pres., Alvin E. Oliver, 400 Folger Bldg., Washington 5, D.C.

Sept. 16-18—National Feed Ingredients Assn.; Pick-Congress Hotel, Chicago, Ill.; sec., Peter W. Janss, 212 Equitable Bldg., Des Moines, Iowa.

Sept. 17-18 — Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; chm., Dr. E. L. Stephenson, Department of Animal Industry.

Sept. 18—College-Feed Industry Conference; Iowa State College, Ames; chm., Prof. Emmit Haynes, Animal Husbandry Dept.

Sept. 23-25 — Feed Production School; Continental Hotel, Kansas City; Lloyd Larson, 20 W. 9th St. Bldg., Kansas City, Mo.

Oct. 6-8 — Northeastern Poultry Producers Exposition; Farm Show Building, Harrisburg, Pa.; sec., Dr. Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

Oct. 7-9—Texas Nutrition Conference; Texas A&M College, College Station; chm., Dr. J. R. Couch, Department of Poultry Science.

Oct. 14 — Animal Nutrition Research Council; Shoreham Hotel, Washington, D.C.; sec., Irwin Olcott, Dawe's Laboratories, Inc., 4800 S. Richmond St., Chicago 32, Ill.

Oct. 14-15—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Agricultural Experiment Station Bldg., University of Kentucky, Lexington, Ky.

Oct. 20-21—Virginia State Poultry Federation; Hotel John Marshall, Richmond, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richmond 19, Va.

Oct. 22-23 — Annual Stockholders Meeting, Cooperative G.L.F. Exchange, Inc., Onondago County War Memorial Building, Syracuse, N.Y.

Oct. 30—Illinois Sheep Producers Day; University of Illinois, Urbana; chm., Dr. U. S. Garrigus, Department of Animal Science.

Nov. 4-7 — National Renderers Assn., Hollywood Beach Hotel, Hollywood Beach, Fla.; sec., Miss Jamie Fox, 30 N. La Salle St., Chicago 2, Illinois.

Nov. 12-13—Cornell Nutrition Conference; Hotel Statler, Buffalo, N.Y.; chm., Dr. F. W. Hill, Poultry Husbandry Dept., Cornell University, Ithaca, N.Y.

1960

Jan. 25-27 — Southeastern Poultry & Egg Assn.; Municipal Auditorium, Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Feb. 12-14—Fact Finding Conference, sponsored by the Institute of American Poultry Industries; Municipal Auditorium, Kansas City, Mo.; pres., Harold M. Williams, 59 East Madison, Chicago, Ill.

Feb. 22-23—Virginia Feed & Nutrition Conference; Hotel Roanoke, Roanoke; J. Paul Williams, sec., Virginia State Feed Assn., 615 E. Franklin St., Richmond, Va., or Prof. Paul M. Reaves, Department of Dairy Science, Virginia Polytechnic Institute, Blacksburg, Va.

March 23—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati; sponsored by Distillers Feed Research Council; exec. director, Dr. Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati, Ohio.

CITRUS PULP PRODUCTION

Members of the Citrus Processors Assn. produced 284,665 tons of citrus pulp and 36,000 tons of citrus molasses during the 1957-58 season.

More and More . . . Feed Mills Are using More and More Stabilized ANIMAL FATS and MEAT PROTEINS

Find Out Why . . . WRITE
NATIONAL RENDERERS ASSOCIATION
Organized In 1933
20 N. LA SALLE ST.
CHICAGO 2, ILL.
Phone FR 2-3299

Purdue Summarizes Outlook for Prices

LAFAYETTE, IND.—Although hog prices are expected to take an upturn soon, it is currently predicted that fed cattle and egg prices are likely to weaken and little change is seen for grain and broiler prices, according to a marketing outlook report prepared by the agricultural economics staff of Purdue University.

Purdue noted that hog prices should begin to strengthen and then follow an upward trend until they reach their summer highs about June. While it looks as though prices will decline after mid-year, the hog-corn ratio is expected to continue favorable through 1959.

Purdue warned cattle feeders not to crowd their luck by holding finished stock too long before marketing because "fed cattle prices are more apt to weaken than strengthen during the next quarter."

The university agriculturists said feeders are gambling on weather conditions when contracting cattle for fall delivery, and noted that severe winter conditions in the range states have reduced feed reserves and increased costs of maintaining the larger number of cattle. "On the other hand," they said, "heavy snowfall may have increased early pasture prospects. Unless optimum feed conditions prevail, larger numbers of feeder cattle will be available this fall, probably at lower price levels."

The marketing report said soybean prices are expected to average near present levels for the next two months, with 1959 planting intentions reported down 7% from last year.

It was stated that if present Commodity Credit Corp. release policies continue, corn prices will likely fluctuate within narrow limits during the next couple of months. This year's planting intentions were reported up 12%.

The predictors said broiler prices will not change much during the next few weeks, but price declines may develop in May as total U.S. supplies again build up sharply above a year ago. Currently, according to the Purdue report, little or no seasonal price strength can be expected during the summer months.

Broilers available from Indiana producers during the next month or so are expected to be substantially below a year ago. "This may result in some temporary local price strength relative to southern areas," the Purdue agricultural staff said.

The outlook for egg prices sees a dip in the weeks ahead. A 1% cut in replacement chick purchases was indicated in February and, currently, a reduction of about 5-8% seems likely. Such reduction would probably result in prices 1@3¢ below the 34¢ Indiana average of September-December, 1958, according to the Purdue report.

Cereal Chemists Plan Discussion on Feeds

WASHINGTON—One of the features of this year's annual meeting of the American Association of Cereal Chemists will be a section on cereals in feeds, according to an association announcement.

The preliminary program was outlined recently for the meeting, which is to be held May 3-7 at the Statler-Hilton Hotel here.

In charge of the section on cereals in feeds will be Dr. H. Ernest Bechtel, director of feed research, General Mills, Inc., Indianola, Iowa. Papers scheduled so far include the following: "Sampling Techniques and Suggestions for Better Feed Quality Control," Bruce Poundstone, secretary of the Association of American Feed Control Officials; "Statistical Quality Control Applied to Everyday Feed Manufacturing Operations," Dr. Walter A. Glista, director of research, Wirthmore Feeds, Inc., Boston; "Influence of Pelleting Operations on Microingredients in Manufactured Feeds," Robert C. Wornick, head of chemical laboratories, agricultural research and development department, Chas. Pfizer & Co., Terre Haute, Ind.

FISH MEAL • FISH SOLUBLES
LIVER MEAL—VITAMIN OILS
FEATHER MEAL—FEED INGREDIENTS
ALBUMINA SUPPLY CO., INC.
82 Beaver St., New York 5, N. Y.

B. D. EDDIE HEADS DRIVE

OKLAHOMA CITY—B. D. Eddie, president and general manager of Superior Feed Mills, Oklahoma City, has been named chairman of the "Share in America" savings bond campagn to be held in Oklahoma City the week of May 11. Mr. Eddie recently met with President Eisenhower and Secretary of the Treasury Anderson to plan the campaign.

Robert W. Nichols | Dr. Karl Beck | Byron McBride | Robert Morton

PROMOTED BY ABBOTT — Floyd W. Thayer, vice president in charge of chemical marketing, Abbott Laboratories, North Chicago, Ill., has announced four promotions "indicative of Abbott Laboratories' expanding activities in the field of quality chemicals." Robert W. Nichols, formerly head of sales for the division, has been named manager of chemical marketing, and Dr. Karl Beck, previously technical service advisor, has been appointed technical service manager. Byron McBride, a sales representative, has been named administrative assistant to the manager of the division, and Robert Morton, also a sales representative, has been named assistant field sales manager.

Bulk Scale Speeds Handling

You find your handling costs going down right away when you use the new Burrows 1200 Bulk Scale. You eliminate costly delays at floor scales and hoppers, you can weigh all kinds of grain and feed "on the move." This saves labor costs and increases the efficiency of your operation.

The scale is specially designed for speedy operation. Brake, scale beam, dump handle and pushing handle are grouped within easy reach of the operator. Rubber wheels and roller bearing casters make full-load handling fast and easy. The sharply sloping bin and the 8" x 14" dump gate assure you of immediate and complete gravity discharge.

The built-in Fairbanks Morse scale weighs down to the ounce—gives you accurate readings every time.

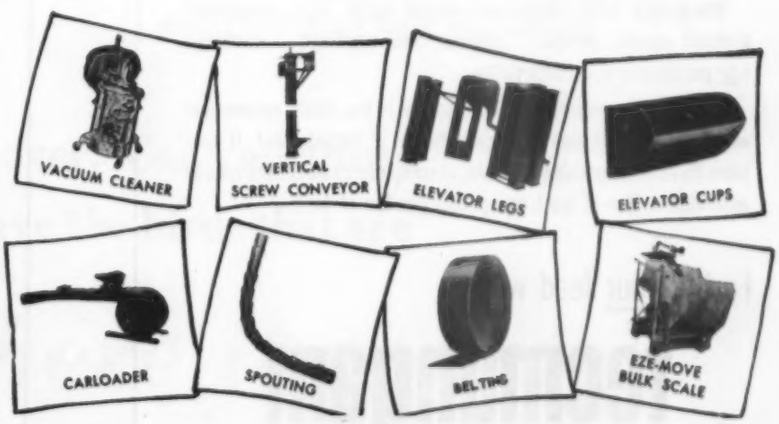
Why not start to save on handling costs this week? **Phone collect** to order your Burrows 1200 Bulk Scale.

Only $295

A COMPLETE LINE FOR YOU

The items shown in this ad are just a few of hundreds of pieces of equipment for testing and handling grain, feed or seed available to you at Burrows.

Your Burrows service man is waiting for your letter or call, ready to ship that needed piece of equipment today.



BURROWS

BURROWS EQUIPMENT COMPANY
1316C Sherman Avenue Evanston, Illinois

More weight ...less wait

when feed contains Tecmangam

Feed fortified with Tecmangam is fortified with manganese—a necessary growth element.

Manganese helps chicks gain weight faster. Also, manganese protects against perosis... reduces shell breakage... increases egg production and hatchability.

Free-flowing, non-dusting Tecmangam is the clean, economical way to add manganese to feeds deficient in this element. It contains 75-78% manganese sulphate, is completely soluble and readily assimilated. Use at least one pound per ton of feed.

Fortify your feed with

tecmangam

EASTMAN MANGANESE SULPHATE

Eastman CHEMICAL PRODUCTS, INC.

KINGSPORT, TENNESSEE, subsidiary of EASTMAN KODAK COMPANY

SELLIN' SAM — By Jim Zilverberg

"G'wan, I am strictly wholesale!"

Georgia Poultry Group Adds 8 Board Members

GAINESVILE, GA.—The Georgia Poultry Federation at a recent meeting here changed its constitution to allow an increase in the board of directors, it has been announced.

The change allows eight new directors. Plans call for each of the affiliated statewide organizations to have two members on the board. The change also calls for the immediate past presidents to be on the board and makes room for two vice presidents rather than one as in the past.

Directors representing the Georgia Hatchery Assn. have already been named. They are Roy M. Durr, Atlanta, a former president of the Georgia Poultry Federation, and Herman Pierce, current president of the hatchery association.

Mr. Durr was one of five former federation presidents honored at the Gainesville meeting. Abit Massey, secretary of the Georgia Department of Commerce and principal speaker, presented gold plaques to Mr. Durr; S. W. Draper, Winder poultryman; J. W. Tankersley, Twin Oaks Hatchery, Gainesville; Smith L. Johnston, J. H. Johnston Co., Woodstock, and Alpha A. Fowler, Douglasville commercial egg producer.

Molasses Firm Begins Construction in Toledo

TOLEDO—Ceremonies here recently on the Presque Isle site of the Toledo-Lucas County Port Authority marked the beginning of construction of a complete facility for handling and warehousing bulk liquids by Industrial Molasses Co., Leonia, N.J.

A. W. Huguley, Jr., vice president of the firm, and W. W. Knight, chairman of the Port Authority's board of directors, turned over the first shovelful of earth.

Initial construction by the firm will include tanks able to store 6.5 million gallons of molasses or other liquid products. The first shipment is expected to be received by May 15.

The molasses firm has other facilities in Albany and Buffalo, N.Y.; St. Paul, Minn.; Superior, Wis.; St. Louis; Baton Rouge and New Orleans, La., and Muscatine, Iowa.

Advertisement

"Genuine counterfeit CPM parts, Bud?"

© 1959 CALIFORNIA PELLET MILL CO.

Growth comparisons under practical farm conditions prove that broilers based on

Nichols 108s top the field in profits

Well over 100 split-house tests were set up by Nichols through its customers during the past year. These tests, involving hundreds of thousands of birds, compared broiler flocks from Nichols 108 females with broiler flocks from White Rock females. Both types were mated with popular male lines.

Of all the test results reported, 74% showed Nichols 108s ahead in point spread (growth and feed efficiency), 6% were even and in only 20% did the White Rocks lead.

This outstanding performance was achieved on commercial farms under ordinary field conditions.

Think it over! Can you afford not to have the birds that are

ahead where it counts!

RESEARCH MAKES THEM BETTER
NICHOLS

Nichols Incorporated

Exeter, New Hampshire

WORTH LOOKING INTO

NEW PRODUCTS • NEW SERVICE • NEW LITERATURE

DESCRIPTIONS OF NEW AND IMPROVED PRODUCTS AND SERVICES PROVIDED BY MANUFACTURERS AND SUPPLIERS ARE PRESENTED IN BRIEF FORM. FOR ADDITIONAL INFORMATION, PLEASE USE THE ACCOMPANYING COUPON.

No. 7453—Bag Tear Strip

Union Bag-Camp Paper Corp. announces the development of a tape tear strip which opens the top of Diamond "O" type multiwall bags quickly and creates a pouring spout. Called Unistrip, it consists of a flat

5/32 in. wide tape held in place in the valve of the bag by a quick-drying adhesive, the company says. The length of the strip has been standardized at 6 in. It can, the company says, be furnished in strips up to 10 in. at additional cost. For details check No. 7453 on the coupon and mail to this publication.

No. 7461—Packaged Feeder

A packaged feeder which can be installed in two steps has been developed by Fuller Co. Designed to facilitate the introduction of material into any kind of an air pressure conveying unit, the feeder can be adapted to small and large operations. It will handle any material which can be conveyed pneumatically, the company says, and will feed from bin, hopper or conveyor. After uncrating, the unit is put into position and the single air connection made. It is then ready to operate. A rotary-vane type, the unit provides efficiency because of a design feature which permits air entry in both head plates, resulting in more thorough cleaning of pockets, the company says. Details can be secured by checking No. 7461 on the coupon and mailing.

No. 7458—Poultry Catalog

Poultry management information and description of its facilities are contained in a 24-page catalog published by Babcock Poultry Farm, Inc. The catalog discusses such subjects as egg quality, random sample test results, poultry management, genetics and research. In full color and completely illustrated, the catalog contains a chart of the Babcock Poultry Farm organization. Copies are available by checking No. 7458 on the coupon and mailing to this publication.

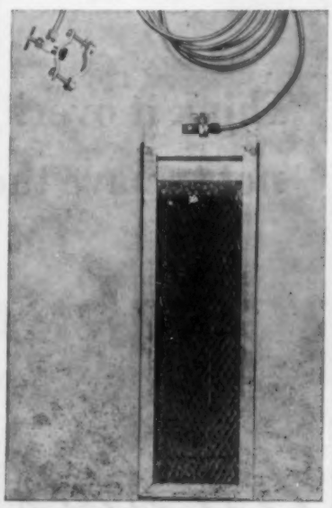
No. 7463—Egg Vendor

"T"-Line Egg Vendor is the name of an egg vending mechanism being manufactured by Tobias Enterprises. The egg vendor can be attached to any walk-in egg cooler, enabling the unit to double as a cooler and vendor, the company says. Mounted on

panels ready to install, the egg vendors will help eliminate the problem of retail egg sellers having to stop work to wait on egg customers, the company claims. The refrigeration unit from the walk-in cooler would also refrigerate the eggs in the vendor. For information about the egg vendor, check No. 7463 on the coupon and mail to this publication.

No. 7456—Egg Cooler Humidifier

Master-Bilt Refrigeration Manufacturing Co. has announced the development of a humidifier which will be standard equipment on all of Master-Bilt's Eggmaster model EH plug-in egg cooling units. The humidifier, known as the "Humidicomb," is a rigid metal frame holding a water-absorbent material of



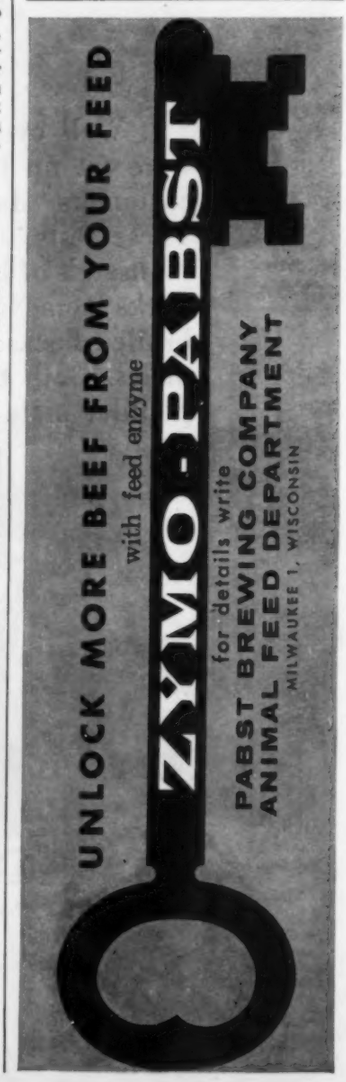
cellular construction with 760 sq. in. of active water evaporating surface, the company says. A water supply unit, using water from either a pressure or gravity source, and consisting of a distributing wick and a flow-control valve, drips water over the cellular material. The excess water is caught by the condensate pan and carried away through the overflow outlet. Details can be obtained by checking No. 7456 on the coupon and mailing to this publication.

No. 7460—Hydraulic Drive Mechanism

A hydraulic drive mechanism to control the speed of the screw conveyor in the Sprout, Waldron & Co., Inc., "Economy Model" bulk truck, has been announced by the company. Components of the mechanism include a variable speed control valve, hydraulic motor and pump, reservoir, relief valve and necessary hose lengths and fittings. According to the company, the bulk truck would still be furnished with the step pulley drive. The hydraulic drive is considered optional equipment. More information is available by checking No. 7460 on the coupon and mailing to this publication.

No. 7451—Temperature System

Rolfes Electronics Corp., division of Rolfes Grain Aeration Companies, is now marketing its "ARO" (automatic digital read-out) temperature scanning system. The unit, according to company literature, is capable of reading 1,250 temperature cables with 18 sensing points on each cable, yet is compact enough to require only a small space. The compactness, the company says, is accomplished through the use of "digital indicated lights" which are automatically projected onto a rectangular screen showing the exact location of the bin and sensing point being read. A "scan-control-knob" enables the operator to slow down



Send me information on the items marked:

- ☐ No. 7445—Reprint Price List
- ☐ No. 7449—Sodium Phosphate Bulletin
- ☐ No. 7451—Temperature System
- ☐ No. 7453—Bag Tear Strip
- ☐ No. 7454—Bin Level Indicator
- ☐ No. 7455—Bulk Transport
- ☐ No. 7456—Egg Cooler Humidifier
- ☐ No. 7457—Pig Feeder
- ☐ No. 7458—Poultry Catalog
- ☐ No. 7459—Pneumatic Handling Equipment
- ☐ No. 7460—Hydraulic Drive Mechanism
- ☐ No. 7461—Packaged Feeder
- ☐ No. 7462—Vibration Inducer
- ☐ No. 7463—Egg Vendor

(PLEASE PRINT OR TYPE)

Others (list numbers) .....

NAME .....

COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS PERMIT No. 2 (Sec. 34.9, P. L. & R.) MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Feedstuffs

P. O. Box 67

Reader Service Dept. Minneapolis 40, Minn.

or speed-up the automatic readings to fit his needs, and can be converted to a manually operated system, the company says. Check No. 7451 on the coupon and mail for details.

No. 7457—Pig Feeder

The "Kumfort Kup" nursery feeder, an eight-place unit designed for the sanitary feeding of pigs up to 100 lb., has been introduced by Fairfield Engineering & Manufacturing Co. The feeder has places shaped to fit the pig's lower jaws, resulting in self-cleaning of the white baked-on enamel cups as they eat. The completely assembled unit weighs 42 lb.,

and is only 18 in. in diameter with a 15 in. galvanized steel hopper. The capacity of the hopper is 100 lb. and is suspended on a stationary center post from which it can be easily lifted for sanitizing of cups and hopper, the company says. The feed drops from the fluted bottom of the hopper directly under the pig's mouth. Details are available by checking No. 7457 and mailing.

No. 7445—Reprint Price List

American Poultry & Hatchery Federation has announced the availability of a price list on reprints of its "Care of Baby Chicks" booklets. Designed for use as a good will mailing piece, the booklets are revised annually by the federation. Space is available on the cover of the booklet for imprinting the firm name. Complete details on chick raising are included. Check No. 7445 on the coupon and mail for details.

No. 7462—Vibration Inducer

A trackside, permanent-mount vibration inducer has been announced by Martin Engineering Co. Designed for push-button unloading of hopper-bottom railroad cars, the unit moves all types of bulk materials from the cars, the company says. One man can operate the unit without having to crawl beneath the car for any reason. To operate the car shaker, railroad cars are placed over track hoppers and after the car gates have been opened, the vibrator head is pushed against the side of the car by means of a hydraulic cylinder. A belt-driven vibrator head generates

how are you
fixed for
Shellbuilder
pure crushed reef oyster shell?

Shellbuilder Company, Melrose Bldg., Houston, Texas

McCabe Grain Company Limited
WINNIPEG-VANCOUVER
LONDON, ENGLAND
Schwartz & Co. (Grain) Ltd.
Victoria Products and Grain (overseas agents) Ltd.

Strong Scott

"Our feed SALES

HAVE INCREASED APPROXIMATELY 40%"...

says Dale Anderson manager of Peterson Co-Op Elevator Co. Peterson, Iowa

Dale Anderson, above, manager of Peterson Co-Operative Elevator Company, provides complete facilities for his customers. The entire Elevator is a modern, up-to-date addition to Peterson, Iowa.

With 75 HP on the mill and 30 HP on the fan, full capacity operation of the Hammermill is normal routine. Handy, time-saving, quick-change screen controls are located on the main floor.

Minor feed additives are mixed and blended in a matter of minutes in the 2 ton Strong-Scott Triple Action Mixer.

"In the 7 months we've had our Strong-Scott Hammermill and Triple Action Mixer, our sales have equalled what they were the entire 12 preceding months.

"We grind all small grains," added Dale, "and have no trouble at all in grinding a two ton load in 10 minutes." Mixing, grinding, and conveying is a fast, automatically controlled operation at Peterson, Iowa.

"I sure like those specially hardened, sectionalized screens," said Dale. "Ours still don't show any wear whatsoever." Quick-change screens of various sizes in the Strong-Scott Hammermill offer ideal selection for custom grinding.

Equipment Designed For Better Processing

The Strong Scott Mfg. Co.

451 Taft Street N.E.
Minneapolis 13, Minn.

Let Strong-Scott show you how to cut operating costs and increase capacities.
Please send information on:
☐ Hammermill ☐ Triple Action Mixer

Name_____
Firm_____
Address_____
City_____ State_____
Dept. FI-59

imbalance forces. The impact is transmitted to the side sill of the car and directly to the sloping portion of the hopper. Details are available by checking No. 7462 on the coupon and mailing.

No. 7449—Sodium Phosphate Bulletin

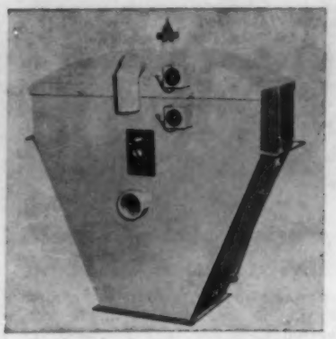
A revised technical bulletin and use reference guide covering sodium phosphate products have been made available by Monsanto Chemical Co. The bulletin contains information on the use of phosphates in the food industry, water treatment and mineral supplements for livestock. Copies are available upon request. Check No. 7449 on the coupon and mail to this publication.

No. 7454—Bin Level Indicator

An automatic bin level indicator, designed for applications where corrosion and chemical action may be factors, is announced by BinDicator Co. The "Auto-Bin-Dicator" body is made from heavy aluminum castings and the diaphragm is of stainless steel. The company says the controlled movement of the spring-loaded diaphragm and the sensitivity of the switch mechanism make the unit responsive to changes in pressure of materials, and it functions equally well controlling levels of light, low density materials as heavy, dense, coarse or abrasive materials. The unit can be affixed to thick or thin walled bins, or suspended within the bin. It can also be used in chutes and hoppers to prevent choke-ups, overfeeding and damage to machinery, the company says. For details about all models, which are listed by Underwriters' Laboratories, check No. 7454 on the coupon and mail to this publication.

No. 7459—Pneumatic Handling Equipment

Ripco, Inc., has introduced the "Caddy-Vac," which it claims incorporates a new approach to vacuum design. The Ripco design of the vacuum chamber forces granular feed and grain into the air lock. According to the company, the forced method has increased the unit's capacities, and thereby reduced loading and unloading time. The Caddy-Vac is designed to fit over the Ripco feeder installed at the rear of the truck. Tension-type fastening cables enable quick installation or removal, the company says. Capacity ratings, according to Ripco, are 12 to 18 tons an hour for free flowing grains, 10 to 15 tons an hour for pellets and



crumbles and 8 to 12 tons an hour for mashes and concentrates. Check No. 7459 and mail for details.

No. 7455—Bulk Transport

Dorsey Trailers announces the Bulkmaster self-unloading bulk transport for handling a variety of dry materials. Designated model FB-T, the unit unloads fertilizer, lime, salt, seed, coke, sulfur and other dry granular commodities, the company says. The unit pit dumps or can be equipped with a 14 ft. folding

New field proof that nf-180® is the best way yet to control hog scours

When hog feed customers see their herd being devastated by necrotic enteritis or bloody dysentery, they need help fast. Not stop-gap help, but a treatment that really works.

You can give them that help with the new nf-180 treatment now proved effective in actual field use. Since this nf-180 use was introduced just a few months ago, hundreds of hog men have tried it with satisfaction . . . saved thousands of hogs from necro and bloody dysentery. Even where all other treatments have failed, nf-180 has done the job . . . stopped scouring, put hogs back on feed . . . straightened out runts.

Scientists credit nf-180's effectiveness to its unique ability to out-and-out kill germs...not just slow them down and provide the opportunity for resistant strains to develop, and unlike arsenic compounds, nf-180 is entirely safe.

Experienced swine raisers are proving to themselves that nf-180 is the first scours-treating feed medication that is really effective against *both* necro and bloody dysentery. It opens the way to new opportunities for you, through ready-mixed feeds and custom-mixing service. Add nf-180 to a complete ration at the rate of 300 grams furazolidone per ton. Feed this ration for 10 to 14 days.

It works! Saves pigs . . . satisfies customers and brings new ones, too. Get complete details from your Hess & Clark representative or write us for the nf-180 Swine Scours Service Kit. NT-3-7

nf-180® furazolidone

HESS & CLARK, Inc.
ASHLAND, OHIO

Feed Laboratory . . . Necessity or Showplace?

A modern laboratory makes an impressive stop on any plant tour, adds to company prestige, marks you as a progressive firm. More and more, management is recognizing the intangible "showplace" value of a laboratory.

But certainly a laboratory could never be justified on this basis alone. First and foremost, a feed laboratory must be able to pay its own way in savings. How can a laboratory do this? There are several ways. For instance, it has been estimated that accurate, in-plant determination of the protein content of ingredients . . . at the time of mixing . . . can save from $1 to $2 a ton on the cost of finished feeds. There is a point in the growth of a feed mill when a laboratory becomes an economic necessity. Perhaps your mill has reached that point. Maybe you've passed it. Why not investigate today. With only a brief description of your operations, we can supply you a quotation on all of the apparatus, equipment and furniture required for a modern feed laboratory for your mill. No cost, no obligation and it could mean important savings for you. We offer a complete service, from planning through manufacturing, plus assistance in installation when required.

Laboratory Construction Co.
8811 Prospect Kansas City, Mo.

or rigid full-swiveling 18 in. wide endless-belt elevator. A boom and cable assembly swivels the elevator around to lie flat against the body when not in use. A tandem hydraulic pump, powered by a 25 h.p. air-cooled gas engine, supplies pressure to operate the rubber belt conveyor, which is riveted to a 36 in. heavy-duty steel conveyor chain and elevators, the company says. The system discharges in excess of one ton per minute, depending on the material. For details check No. 7455 and mail.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 7402—Bulletin on motor starters, Richardson Scale Co.

No. 7403 — Elevator equipment, Munson Mill Machinery Co.

No. 7404—Grain storage building, Stran-Steel Corp.

No. 7405—Silo counter display, Flavor Corporation of America.

No. 7406—Laboratory service data, Wisconsin Alumni Research Foundation.

No. 7407—Grain conveyor, cleaner, Dunbar-Kapple, Inc.

No. 7408—Air delivery feeder, Ripco Air Systems.

No. 7409 — High speed "Checkweigher," Thayer Scale Corp.

No. 7410—Feeder valve bulletin, Sprout, Waldron & Co., Inc.

No. 7411—Silage activator, Biochemical Corp.

No. 7412—Portable pasture waterers, Starline, Inc., and H. D. Hudson Manufacturing Co., distributors.

No. 7413—Multi-use feed wagon, Brower Manufacturing Co.

No. 7414—Poultry raising manual, Earl W. Garrison, Inc.

No. 7415—Feed mill, Shelby Manufacturing Co.

No. 7416—Automatic batching device, the Howe Scale Co.

No. 7417—Data sheet on shovel, Munson Mill Machinery Co.

No. 7418—Bovine mastitis information, Chas. Pfizer & Co., Inc.

No. 7419 — "Vibratory" feeder, Eriez Manufacturing Co.

No. 7420—Screening feeder, Syntron Co.

No. 7421—Supplement hog feeder, Brower Manufacturing Co.

No. 7422—Plant planning article, Sprout, Waldron & Co., Inc.

No. 7423—Antibiotic for mastitis, E. R. Squibb & Sons, division of Olin Mathieson Chemical Corp.

No. 7424—Portable pellet mill, Dodgen Industries.

No. 7425—Steam boiler bulletin, Sellers Engineering Co.

No. 7426—Test sieve shaker data, Syntron Co.

No. 7427—Steel silo, Martin Steel Corp.

No. 7428—Egg packaging material, Independent Carton Co.

No. 7429—Gross weigher, Thayer Scale Corp.

No. 7430—Polyamino acids data, Mann Research Laboratories, Inc.

No. 7431—Vibration inducer, Martin Engineering Co.

No. 7432—Conveying system bulletin, Sprout, Waldron & Co., Inc.

No. 7433—Rumen literature, the Amburgo Co., Inc.

No. 7434—Animal by-product booklet, American Meat Institute Foundation.

No. 7435—Moisture determination balance, Burrows Equipment Co.

No. 7436—Over-under controller, Ralph C. Gardner & Co.

No. 7437—Chain drag conveyor, Sprout, Waldron & Co., Inc.

No. 7438—Dryer leasing plans, Daycom, Inc.

No. 7439—Automatic proportioning systems, Toledo Scale Corp.

No. 7440—Grain car literature, General American Transportation Corp.

No. 7441—Weigh-feeder machine, Syntron Co.

No. 7442—Plastic egg models, Tyrone Equipment Co.

No. 7443—Suspension waterer, Oakes Manufacturing Co.

No. 7444—Stilbestrol product, Eastern Laboratories, Inc.

No. 7445—Reprint price list, American Poultry & Hatchery Federation.

No. 7446—Suspended-conveyor weigher, Thayer Scale Corp.

No. 7447—Automatic checkweigher, Toledo Scale Corp.

No. 7448—Bin design booklet, Sprout, Waldron & Co., Inc.

No. 7449—Sodium phosphate bulletin, Monsanto Chemical Co.

No. 7450—Enzyme feed fortifier, Pabst Brewing Co.

No. 7451—Temperature system, Rolfes Electronics Corp., division of Rolfes Grain Aeration Companies.

No. 7452—Equipment leasing study, Foundation for Management Research.

No. 7453—Bag tear strip, Union Bag-Camp Paper Corp.

Wirthmore Dealer

WALTHAM, MASS. — Wirthmore Feeds, Inc., announces that the James H. Gray Milling Co., Inc., operator of six mills in western New York, is now stocking Wirthmore feeds. Don Mattison, president of the Gray firm, said his company will carry the complete Wirthmore line and will supply concentrates for those who wish to make their own mixes. The company also will continue to offer its own brand, Gramco, at its mills in Franklinville, Springville, Cattaraugus, Little Valley, Collins and East Otto.

For feed formulas that Build Profits.....

Mix in Minnesota soybean meal!

There's a QUALITY DIFFERENCE!

YES, we're in the soybean meal business, too. Testing and processing facilities, developed in our more than ninety years of producing the finest linseed oil meal, are helping us also to produce a superior 44% soybean meal. Know-how makes it a high-protein meal that you can use or recommend with confidence. Mix Minnesota 44% Soybean Meal in your own formulas for heavier, healthier livestock that increase your customers' profits at the market. They'll show their appreciation by coming back for more!

Write . . . wire . . . or phone your requirements

Minnesota LINSEED OIL CO.

MINNEAPOLIS 21, MINNESOTA ◆ SUNSET 8-9011

AA Arbor Acres

Make sure

Your broilers come from ARBOR ACRES females!

West to Promote Swine Expansion With Integration

LOS ANGELES — Meat packers and processors of 10 western states have started a movement to free the West from almost complete dependence on the Midwest for pork and pork products.

This action was one of the outstanding developments at the annual convention of the Western States Meat Packers Assn., held recently at the Statler-Hilton Hotel here.

The association aims at "an integrated program for producing hogs in the West" and will start talks with "producers and others interested" in such a program at an early date.

Other convention action included asking Secretary of Agriculture Benson to call national conferences to consider revising federal standards for grading of beef and lamb.

E. Floyd Forbes, San Francisco, was re-elected association president and general manager for the 14th consecutive year. He has headed the association ever since it was organized in 1946.

Meeting in Los Angeles for the second time in its history, the convention was heavily attended.

A session devoted to federal meat grading sought an answer to the question, "Do present grade standards really reflect consumer preferences?"

J. R. Broadbent, Salt Lake City, chairman of the lamb committee of the National Wool Growers Assn., pleaded for complete abolition of federal grading of lamb, declaring that it "thwarts consumer preferences."

Representatives of cattle producers and retail outlets recommended against any changes in beef grading standards, except after "mature deliberation by all sections of the industry connected with beef."

Roy A. Lennartson, deputy administrator, Agricultural Marketing Service, Washington, told the packers he feels "There is a high degree of reflection of consumer preference by grade standards as now established."

People who like to eat pork but fear it is fattening got good news from Carl F. Neumann, general manager, National Livestock & Meat Board, Chicago. Mr. Neumann said recent research indicates that pork, as it is produced today, contains 57% less fat than was previously thought, 36% fewer calories and 22% more protein.

Mr. Neumann also said that research has established that pork is the key source of thiamine, a vitamin B component, which the human body requires to keep its nervous system in running order.

The amount of meat each American eats has been slowly climbing to new records, but the proportion of pork to other meats has been falling, Dr. Jesse T. Bell, professor of animal science, Fresno State College, told the packers.

"This setback has been the most serious during the last seven to 10 years," Dr. Bell said. "Pork producers are not getting their fair share of the consumers' dollar and certainly pork demand is not keeping pace with the increased population."

CHECKERBOARD GRAIN COMPANY
Buyers and Sellers
of
MILLFEEDS, GRAINS AND GRAIN PRODUCTS
CHICAGO KANSAS CITY ST. LOUIS MINNEAPOLIS

"I've got '52 corn in Butler Storage and it's still in top condition..."

"And you can't beat that for safe storage." These are Fred Seitz's own words. Fred owns and operates the Farmers Grain Service Inc. at Grand Ridge, Illinois.

He bought his first Butler flat storage building in 1950. He was so pleased with it, that as the demand for storage space increased, he kept adding more Butler flat storage. Today he stores over 700,000 bu. in 7 Butler buildings and in all this time water damage and insect infestation has never been a problem . . . he's never spent a nickel on building maintenance. And he plans to keep right on expanding, as needed, with Butler flat storage buildings.

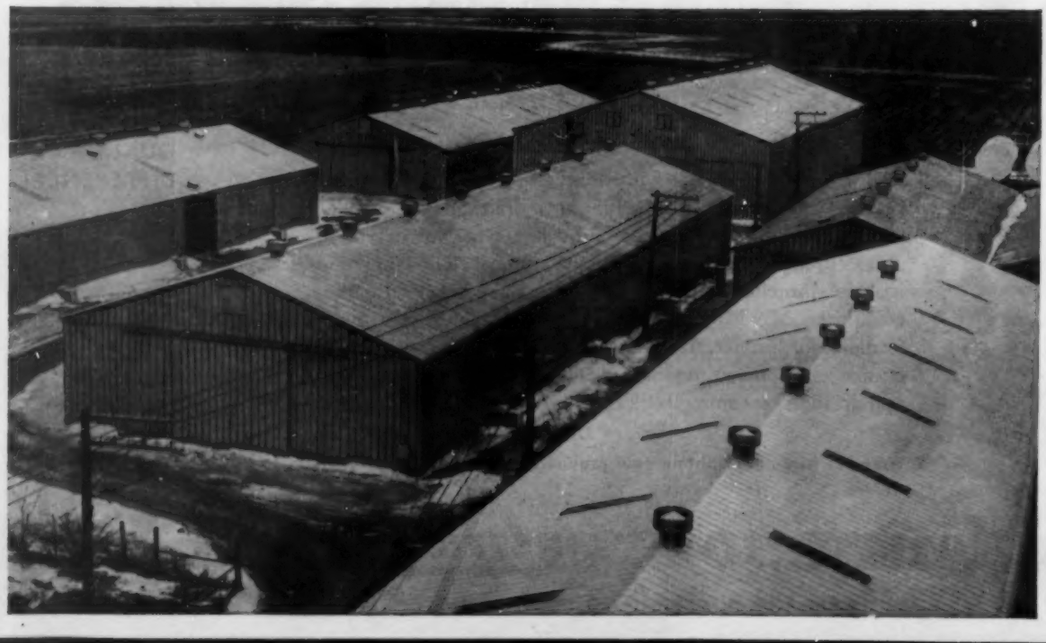
If you're planning to add flat storage this year, investigate Butler grain storage buildings before you buy. Don't gamble your grain investment in unproven . . . doubtful storage. Only Butler storage gives you the protection you need for really safe, really profitable grain storage.

If you want, call Fred Seitz at our expense. His phone number is Grand Ridge, Illinois 9-5515. And get the truth about Butler storage right from him.

Or, call your nearby Butler Builder. He'll be glad to give you complete details and prices on Butler flat storage buildings, the finest . . . lowest-cost safe storage you can buy. Or write directly to us for literature.

BUTLER

BUTLER MANUFACTURING COMPANY
7402 East 13th Street, Kansas City 26, Missouri
Manufacturers of Metal Buildings • Equipment for Farming, Dry Cleaning, Oil Production and Transportation, Outdoor Advertising • Contract Manufacturing
Sales offices in Los Angeles and Richmond, Calif. Houston, Tex. • Birmingham, Ala. • Kansas City, Mo. Minneapolis, Minn. • Chicago, Ill. • Detroit, Mich. Cleveland, Ohio • Pittsburgh, Pa. • New York City and Syracuse, N.Y. • Boston, Mass. • Washington, D.C. Burlington, Ontario, Canada



North Carolina Feed Tonnage Up by 17%

RALEIGH, N.C. — Feed tonnage shipped in North Carolina during the first eight months of the current fiscal year is running well ahead of the same period a year earlier, the North Carolina Department of Agriculture reports.

From July, 1958, through February, 1959, the total tonnage was 1,022,581, compared with 870,202 for the same period a year earlier. This is an increase in excess of 17%.

Every month of the current fiscal year has shown an increase over the same month a year earlier. The February report shows a total of 112,723, compared with 105,041 in February, 1958.

HATCHERY TO BUILD MILL

NASHVILLE, ARK. — Cassady Hatchery here has under construction a new $100,000 feed mill and grain terminal along with four new 10,000-capacity broiler houses. The added production capacities will increase the firm's program to 900,000 birds on feed, bulk fed from the Nashville Feed Mill.

SPECIFY
Columbia Calcium
COLUMBIA QUARRY CO.
1007 Washington Ave
ST. LOUIS 1, MO.

DEVOLD
Serving Mills & Breeders For Over 30 Years
Devolkod ® Vitamin Oils (Fortified Cod Liver Oils)
Devolkod ® Non-Dest. Cod Liver Oil U.S.P.
Devold Vitamin A & D Feeding Oils
Devold Vitamin A Oils
Peder Devold Wheat Germ Oil
"Stabilized" From Can to Carloads
ORegon 9-8400
PEDER DEVOLD OIL CO.
Division of Chas. L. Huisking & Co., Inc.
417-FM Fifth Avenue
New York 16, N.Y.

CHECK FEEDSTUFFS WANT ADS!!

"My, they grow up *so* fast"

"It seems such a short time ago that Joan was just a baby. And now she's starting high school!

"Funny how youngsters seem to grow up so much faster than when I was a girl. But I guess it's just this day and age . . . everybody's so much busier . . . doing all kinds of new things . . . so many new products and conveniences . . . why, you just lose all track of time.

"Just imagine—now we have every single convenience on the farm that they have in the city. And it wasn't very long ago that keeping house on a farm meant working harder than other wives.

"Oh, I'll admit life on the farm hasn't always been easy. But it seems like Ed and I have had a lot more good times than poor ones. We've made a good team. And things have changed so much since we started on the farm.

"There are so many more people now! And judging from stories in the papers, there'll be almost twice as many people in years to come. My gracious, I wonder how many houses it will take to make enough homes for them all? And how much more food will it take to feed them? What a challenge it's going to be for our farms to produce so much more! I guess it means a man will have to be a really *good* farmer.

"Of course, to be a good farmer means our youngsters, and we too, will have to be alert and smart. Things are bound to come along that will change some ways of farming, and we'll have to adjust to them.

"I guess the best thing *we* can do is to bring Joan up properly. Then, let her make up her own mind what she'll do. Her farm background should be valuable in whatever she chooses. I can't help but think, though, that Joan will see things as I did and become a farm wife. A lot of work and responsibility—yes. But if the future rewards her as it has me, it will be the wisest decision she'll ever make."

* * * * *

You know, that's the sort of thinking that's been going on at Cargill, too. It makes good sense to us.

We have a lot of confidence in today's farm folks, and their youngsters.

As a Creative Processor of farm products, we've worked closely with farmers for 93 years now—and we've learned just how much these people contribute to this country's economy. The farmer represents free enterprise in its finest form.

With the statisticians predicting a U.S. population of 220 million by 1975—then topping that by predicting a world population of 3½ billion by 1999—it figures there will be a lot more farm products consumed than there are today. That means a larger demand on the farm than ever before . . . a tremendous new challenge to Cargill Creative Processing to find new ways to change raw farm crops into finished products, and to find new markets for those products.

Cargill
CREATIVE PROCESSING

93 Years of Creative Processing of Farm Products

CARGILL

GRAIN PROCESSING CORPORATION
MUSCATINE, IOWA Telephone AMherst 3-1321 TWX495

© 1957

Primary Fermentation Products

Riboflavin — Vitamin B-12 — GP-101, source of whey and other unidentified growth factors

New Jasper Industries

JASPER, ALA. — Industries acquired by Jasper during 1958 include the Marshall Durbin poultry processing plant, which cost about $750,000. It is now in operation, giving employment to from 300-350 persons.

The million dollar Pillsbury Co. push-button feed mill will soon be built, and a branch plant of the Quaker Oats Co. will be constructed. Among the local industries are Chemell's Hatchery, the largest hatchery in the state, and Cobb's Hatchery.

ARKANSAS FEED FIRM

LITTLE ROCK, ARK.—South Arkansas Feed Mills, Inc., Nashville, Ark., has filed articles of incorporation with the office of the Arkansas Secretary of State here. Incorporators are Keith Smith, Hot Springs, and Bob McClure and James P. Johnson, both of Nashville. George E. Steel, Nashville, was listed as agent.

• Actually his name doesn't matter, nor what he looks like. The thing that really counts is his job. He's a specialist in extraction equipment and although he can't solve all your problems, he can help improve your products and processes. He has provided guidance for scores of plant executives with a wide variety of oil milling problems, through his knowledge and conscientious desire to help. When you talk to him, you never feel you're wasting your time—or that you have to buy anything.

He's your man who can help *you* with *your* situation. Perhaps you'd like to ask him a few general questions about an operating or maintenance problem in *your* plant.

If so, just ask. Helping you is his job. Address your letter to:

ONLY ANDERSON MAKES EXPELLERS

THE V. D. ANDERSON COMPANY
division of International Basic Economy Corporation
1944 West 96th Street • Cleveland 2, Ohio

Gal: "I'll die if you don't kiss me."

Boy: "This is terrible. I'm being torn between Love and Duty."

Gal: "What do you mean, dear?"

Boy: "I'm in the undertaking business."

◆ ◆ ◆

"Dad, we learned in school today that animals get new fur coats every year."

"Quiet! Your mother might hear you."

◆ ◆ ◆

Just in case you're interested in the latest variation of the "later, alligator" routine, it runs like this:

"See you tonight, satellite."

"In the void, asteroid."

◆ ◆ ◆

He: "I'm thinking of asking some girl to marry me. What do you think of the idea?"

She: "It's a great idea, if you ask me."

◆ ◆ ◆

Tommy: Mother, are there any trucks in heaven?

Mother: I doubt it, son. They have to be driven by truck drivers.

◆ ◆ ◆

Smith was sitting down to breakfast one morning when he was astounded to see an announcement of his death in the newspapers.

He rushed to the phone at once to call up his boss.

"Hello," he shouted. "Did you see the announcement of my death in the newspapers?"

"Yes," the boss replied, "where are you calling from?"

◆ ◆ ◆

The origin of the expression, "hurrah for our side!" goes back to the crowds lining the streets when Lady Godiva made her famous sidesaddle ride through the streets of Coventry.

◆ ◆ ◆

Upon due reflection, a rural school teacher decided to give full credit to a pupil for his answer to an arithmetic problem.

The question: "If your father sold 1500 bu. of grain for $2 bu., what would he get?"

The answer: "A new car."

YOU CAN TELL...

she's had her
CAFNECTAR
this morning

Cafnectar fortifies milk replacers and calf starter formulas with the sweet milk flavor calves love. Write for sample and information.

FLAVOR CORPORATION OF AMERICA
3037 N. Clark St. • Chicago 14, Illinois

Scientist Discusses Non-Protein Nitrogen Sources

ST. PAUL, MINN.—Protein supplements containing non-protein nitrogen can be used in most ruminant rations, a University of Minnesota animal husbandman points out, if the rations meet three other requirements.

Those requirements, said Dr. R. M. Jordan, are: (1) a ready source of energy such as grain, (2) adequate minerals, particularly phosphorus and sulfur, and (3) palatability.

He said that "in no case are non-protein sources of nitrogen superior to pre-formed proteins, and they must be bought on a competitive price basis." The report was made in Minnesota Feed Service, a publication of the University of Minnesota Agricultural Extension Service.

Dr. Jordan's report was on experimental data from feeding tests using urea, ammoniated molasses, urea-molasses and urea-molasses-alcohol mix and dicyandiamide as well as pre-formed protein, such as soybean oil meal.

Since rumen microorganisms can synthesize required amino acids from nitrogen sources, whether they are pre-formed sources of non-protein nitrogen compounds, both types contribute a source of nitrogen to the ruminant and/or the microorganisms, he said.

"The question in the animal nutritionist's mind," he said, "is whether the rate of synthesis of the essential amino acids is rapid enough for maximum production."

He indicated that the protein requirement for maintenance is less critical, quality and quantity-wise, than that for the production of meat and milk. Equally important is the difference in response obtained by different species from certain types of protein supplements.

"Non-protein nitrogen compounds contribute neither energy, vitamins nor minerals to a ration," he said. "A failure to provide these essential nutrients would result in a less favorable response from such supplements than if pre-formed protein supplements were fed."

Urea

From research data available, Dr. Jordan said it is possible to draw two general conclusions on urea feeding:

"1. If the ration fed to wintering calves, fattening steers or lambs, pregnant ewes or lactating cows does not contain sufficient protein, adding urea to the ration invariably increases production.

"2. Conversely, if the ration is already adequate in all nutrients including protein, adding a supplement that contains urea to it will not increase average rate of gain to as great a degree as will the addition of a pre-formed type of protein supplement, such as soybean oil meal.

"Consider two rations equal in energy and nitrogen—with the source of nitrogen in the first largely supplied by urea, and in the second by soybean oil meal," he said. "When fed to fattening cattle, the largest production will be obtained with the second ration. What's more, fattening cattle can use urea supplement more advantageously than fattening lambs can."

He said another factor may enter the picture, however. Urea contains nitrogen equivalent to 262% protein. Thus it is often possible to formulate supplements using urea, vitamins, minerals and local grains more economically than it is possible to formulate conventional types of protein supplement, he said.

"Here is the chief advantage of all non-protein sources of nitrogen, including urea," he reported. "If such supplements can be formulated and sold for 15 to 20% less, the stockman can then afford to accept slightly less production. It is at a time when soybean oil meal is high-priced in relation to grains, therefore, that urea has its greatest advantage as a source of nitrogen for ruminants."

Ammoniated Molasses

A mixture of cane molasses and ammonia (33% protein) has been used for cattle and sheep. "Since it is self-fed, the amount consumed per animal varies. This may result in either over or under-consumption," Dr. Jordan said, "and will mean inefficient use in either case."

With wintering or fattening cattle, data from Kansas and Oklahoma stations indicate that pre-formed protein or a mixture of urea and molasses supplements is somewhat superior to mixtures of ammonia and molasses, he said.

"A urea-molasses-mineral mix, with ethanol added to enhance the utilization of urea by the animal, is very palatable," he reported, "and consumption by either cattle or sheep is sometimes excessive.

"In Minnesota tests, lambs had an average daily consumption of from 0.4 to 0.8 lb. per lamb. Decidedly greater and more economical gains were made with soybean meal as the source of protein," he said. He stated that the large amount of molasses consumed was actually detrimental to the ration.

Dr. Jordan reported that Cornell University tests in which ethanol was added to a molasses-urea mixture showed "a retention and biological value increase of the ration's nitrogen to about the same extent as adding an amount of starch containing the same amount of energy."

"In general," he said, "experiment station data indicate that ethanol does not improve the rate of gain or have any influence on the carcass composition of beef animals."

Dicyandiamide

"Dicyandiamide is extremely unpalatable," Dr. Jordan said. "It must be mixed with feed that cattle like to eat. In University of Minnesota tests, lambs fed 2½% dicyandiamide and 97½% ground corn made very poor gains and had poor appetites for the first four weeks of the feeding period.

"After that, appetite and average daily gain improved, which suggests that an adjustment period is needed by the rumen organisms. Studies at the University of Kentucky showed that dicyandiamide was slightly inferior to urea as a source of nitrogen for dairy cattle."

Worth Crowing About!!

FEEDSTUFFS WANT ADS

Now! ...a new value in antibiotics for the feed industry!

Exclusive!

FORTRACIN

BACITRACIN METHYLENE DISALICYLATE

(U. S. Patent No. 2,744,712)

Here's an animal feed antibiotic with a new high potency, new stability and a *new low cost!* A purified non-metallic salt of bacitracin made by one of the pioneer producers of antibiotics in the U. S.!

FORTRACIN offers feed and pre-mix manufacturers a unique combination of values never before available. It is recommended as a growth promotion supplement at levels as low as 4 grams per ton for poultry, 10-25 grams per ton of feed for swine.

At higher levels FORTRACIN prevents or treats CRD, bluecomb, infectious sinusitis and bacterial swine enteritis. It will increase egg production, rehabilitate culls and runts, and increase feed efficiency.

Ample stocks have been built up to meet your current requirements. For further information, return the coupon today!

COMPLETELY STABLE!
Maintains potency for years, even at elevated temperatures. Minimizes costly overages.

HIGHEST POTENCY!
Available in 100 gram activity per pound. Many times the potency of other animal feed antibiotics. Also 10 gram activity per pound.

HIGHEST CHEMICAL PURITY!
Not a crude residue. Contains no culture fermentation insolubles!

FREE-FLOWING, NON-CAKING!
Effectiveness is enhanced by improved, more uniform distribution throughout your mix.

MORE ECONOMICAL!
Stability, high potency, consistent chemical purity and free-flowing, non-caking handling ease ... *plus new low cost* ... all add up to substantial savings for you.

PENICK

Farm Chemical and Insecticide Division
S. B. PENICK & COMPANY
100 CHURCH ST., NEW YORK 8
735 W. DIVISION ST., CHICAGO 10

S. B. Penick & Company
100 Church St., New York 8, N. Y.
Gentlemen: Please send complete FORTRACIN data.
NAME_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE____ STATE____

Symposium Topics, Speakers Listed

WASHINGTON—Speakers and topics have been announced for the international livestock and poultry feeding symposium to be held here May 4-6.

Dr. John I. Kross of the U.S. Department of Agriculture's Foreign Agricultural Service, who is in charge of the symposium, announced the following program outline:

May 4—"Welcome," Clarence L. Miller, assistant secretary of agriculture; "The Dynamics of the Feed Industry," J. D. Sykes, Ralston Purina Co.; "Economic Aspects of Feed Grain Supplies," Malcolm Clough, USDA Agricultural Marketing Service; "Economics of Feed Substitution," Dr. Leonard Schruben, Kansas State College; "Minerals," Dr. G. K. Davis, University of Florida; "Amino Acid and Vitamins," Dr. R. W. Luecke, Michigan State University; "New Concepts, Swine," Dr. T. J. Cunha, University of Florida; "New Concepts, Ruminants," Dr. C. F. Huffman, Michigan State University.

May 5—"Current Status of Nutritional Requirements," Dr. H. R. Bird, University of Wisconsin; "Broiler Nutrition," Dr. G. F. Combs, University of Maryland; "Laying Hen Nutrition," C. A. Denton, USDA Agricultural Research Service; "Improved Feed Ingredient Processing," Dr. James Hayward, Archer-Daniels-Midland Co.; "Quality Feed Manufacturing," Dr. J. Krider, McMillen Feed Mills; "Improved Poultry and Egg Products," Dr. Hans Lineweaver, USDA Agricultural Research Service; "Better Dairy Products," Dr. G. P. Whitlock, National Dairy Council; "Higher Quality Meat Products," Dr. Joseph C. Kastelic, University of Illinois.

May 6—"Measuring Improvements in Efficiency of Feed Conversion," Dr. T. C. Byerly, USDA Agricultural Research Service; "Least Cost Feed Formulations," Dr. Frederick K. Waugh, USDA Agricultural Marketing Service; "Better Feeds Products through Pharmacology Studies," Dr. Bernie Oser, Food Research Laboratory; "Safeguards for Feed Users," L. Y. Ballentine, North Carolina State Department of Agriculture; "Closing Remarks," Dr. Max Myers, administrator, Foreign Agricultural Service.

There will be two panel discussions each day. Walter C. Berger, USDA Commodity Stabilization Service, will be moderator of the final discussion, on the "Potentials for Feed Marketing in European Countries," at which time European participants will present situation reports on their respective countries.

About 28 feed specialists, representing government and industry of most western European countries will participate in the symposium.

May 7 the Europeans will study a land-grant college program at Purdue University, and a private laboratory program at the Chas. Pfizer & Co. research and development center, Terre Haute, Ind., May 8-9.

May 10 the group will attend the official opening of the American Feed Manufacturers Assn. convention in Chicago, and May 11 will visit the Chicago Board of Trade and livestock packing operations in Chicago.

The last day of the program, May 12, the Europeans will visit the Northern Utilization Research and Development Division of the USDA Agricultural Research Service at Peoria, Ill. They will depart for Europe from Chicago.

The symposium is being sponsored by the USDA Foreign Agricultural Service and the Soybean Council of America, Inc., in cooperation with other segments of private industry, under a market development program designed to promote greater use of U.S. feedstuffs in Europe. It is being financed in part with funds accruing from the sale of agricultural surpluses for foreign currencies under Title I of Public Law 480.

Robert E. Lungstras

VICE PRESIDENT—Edward S. Deibel, president, Elam Grain Co., St. Louis, recently announced the election of Robert E. Lungstras as vice president (Feedstuffs, April 4). For the past five years he has been with the St. Louis Merchants Exchange as a consultant and in grain and feed merchandising.

NEW ELEVATOR PLANNED

BEAMAN, IOWA — The Beaman Cooperative has completed plans for a new grain elevator with a capacity of 100,000 bu. Construction is to be started immediately and the building is to be completed in time to take care of this year's grain crop.

DYNAFAC

makes the difference...

in your feed sales, too!

Each day, more and more feeders are demanding DYNAFAC PREMIX in their feeds. They want every bit of advantage that modern agricultural science can offer—not just *some* of it!

Regularity of dynafac performance is practically unique. The word is spreading . . . feeder to feeder; success stories are appearing continuously in the farm press and radio; in college reports from all parts of the nation — DYNAFAC PREMIX makes a good feed better!

Feeders have discovered that DYNAFAC PREMIX helps produce beef at new record lows in cost/100 lbs. of gain. They've seen living proof in their own feedlots that DYNAFAC PREMIX gives them better protection, too, against Bloat and Founder. The *new* DYNAFAC PREMIX label lists *results you can expect to get* with dynafac:

SWINE:

1. For promoting growth and feed conversion.
2. For the control of scours of bacterial origin.

CATTLE AND CALVES:

1. For promoting growth, feed conversion, bloom, and on full feed earlier.
2. As an aid in minimizing the occurrence of feed lot bloat due to high consumption of concentrate.
3. As an aid in minimizing the occurrence of feed lot founder due to high consumption of concentrate.

LAMBS:

1. For promoting growth, feed conversion and on full feed earlier.

So, improve your sales position by giving your customers what they want . . . the leading, most talked about feed additive for 1959 . . . DYNAFAC PREMIX!

ARMOUR AND COMPANY, CHICAGO, ILLINOIS

Dynafac Premix is distributed nationally for Armour by the Chemical Department, McKesson & Robbins, Inc.

More profit on feed when you mix your own brand!

BROWER *Whirlwind* **FEED MIXER**

Earn up to $1.50 profit per bag by mixing your own brand of feed with the BROWER MIXER . . . the extra profits soon pay for it! WHIRLS the ingredients instead of just tumbling them . . . mixes a perfect blend in about 10 minutes . . . fast, economical! Built for years of trouble-free service. Five sizes. World's Largest Selling Mixer!

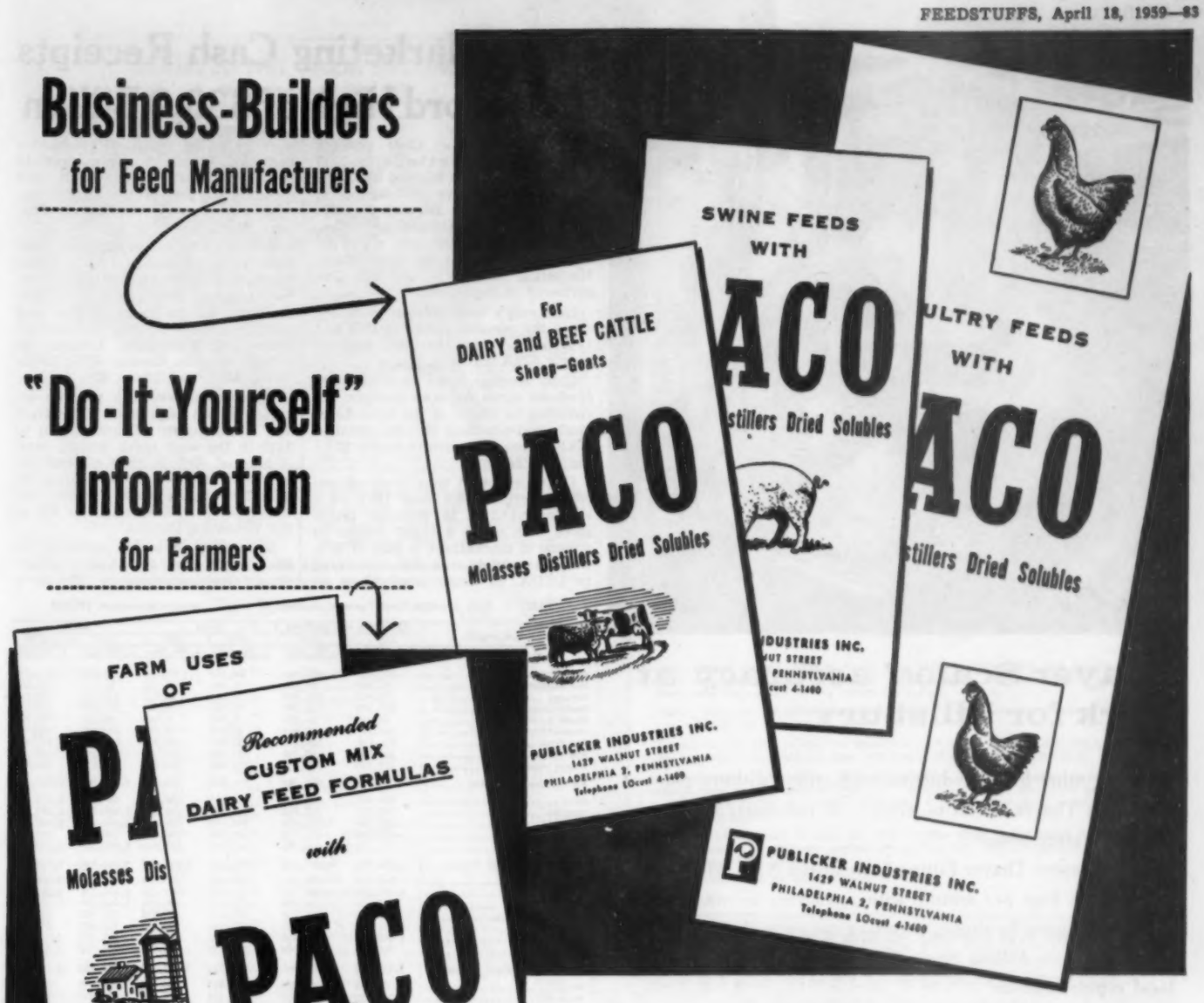
BROWER MFG. CO., 566 N. Third St., Quincy, Ill.

Write for FREE CATALOG

MOO--ORE NEWS IN FEEDSTUFFS

Business-Builders
for Feed Manufacturers

"Do-It-Yourself" Information
for Farmers



These authoritative leaflets on the advantages and correct usage of Paco Molasses Distillers Dried Solubles are responsible for improvement and increased business in all formula feeds. They contain exactly the kind of information wanted by Feed Manufacturers . . . no exaggerated claims, no "bull." Just the facts on what PACO is, what it will do, what it has done, how to use it for bigger profits.

The complete line of Paco folders is now available to all Feed Manufacturers and Dealers, for their own information, along with other literature to distribute to their customers. If you are not acquainted with PACO and its many advantages as a fortifier and "freshener" for all types of feeds, we will be pleased to send by return mail the data you check on coupon below.

ALSO AVAILABLE IN 50-LB. BAGS

Here is the ideal, fast-selling package for direct sales to farmers and cattlemen.

PACO MOLASSES DISTILLERS DRIED SOLUBLES

A PRODUCT OF PUBLICKER INDUSTRIES INC.
1429 Walnut Street, Philadelphia, Pa., Phone: LO 4-1400
MIDWEST SALES AGENT
The North American Trading and Import Co.
101 Arsenal St., St. Louis, Mo. Tel.: PR 6-0858
SHIPMENTS FROM PHILADELPHIA, PA. AND GRETNA, LA.

PUBLICKER INDUSTRIES INC.
Animal Feed Sales Department, 1429 Walnut St., Philadelphia 2, Pa.

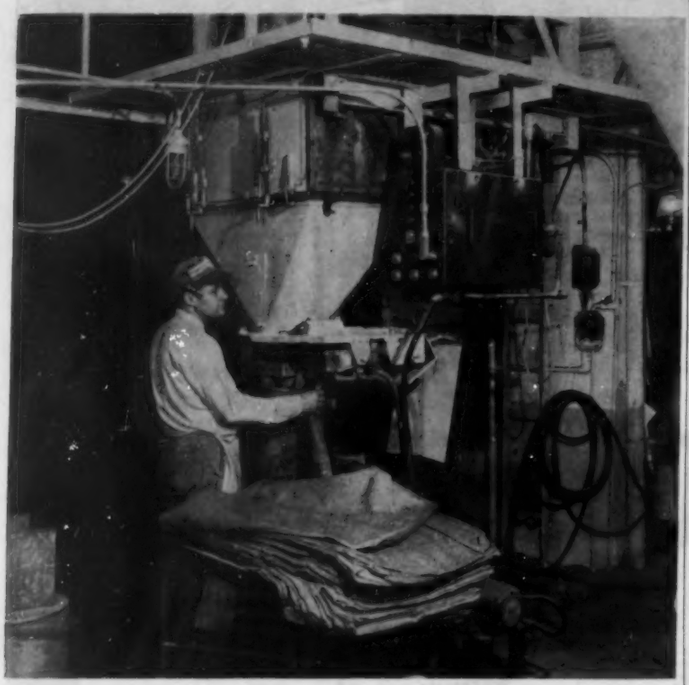
Without obligation send the following:

Check Here
- ☐ POULTRY FEEDS with PACO
- ☐ SWINE FEEDS with PACO
- ☐ DAIRY and BEEF CATTLE FEEDS with PACO

Folders to distribute to our customers:

Indicate no. desired
- CUSTOM MIX DAIRY FEEDS with PACO
- FARM USES of PACO

CLIP THIS COUPON TO YOUR LETTERHEAD

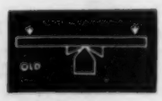


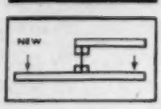
Thayer Scales' accuracy at work for Pillsbury

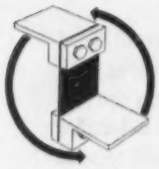
Like other high production mills, this Pillsbury plant at Lima uses Thayer Scales to provide its customers full weight without "safety losses".

The newest Thayer Filling Scale model N18C fills 10 one-hundred lb. bags per minute with unvarying accuracy. Materials are changed by simply adjusting one control. Write for an interesting new *Filling Scale Bulletin* and the name of your local representative.

THE THAYER PLATE LEVERAGE SYSTEM IS GUARANTEED *accurate for the life of the scale. This simple, patented system eliminates vulnerable knife-edge pivots by utilizing unchanging flexure plates. It is not affected by dirt, vibration or shocks. Its reliability is largely responsible for the highly successful operation of Thayer Filling, Batching and Checkweighing Scales.*







THAYER SCALE

AUTOWEIGHTION SYSTEMS FOR FILLING, BATCHING AND CHECKWEIGHING

THAYER SCALE CORP. • 9 THAYER PARK, PEMBROKE, MASS.

Farm Marketing Cash Receipts At Record High of $33.2 Billion

WASHINGTON — Cash receipts from farm marketings in 1958 reached an all-time high of $33.2 billion and were above 1957 figures in all regions and in all states except three — Nevada, Oregon and Kentucky—which showed only slight declines, according to the Agricultural Marketing Service of the U.S. Department of Agriculture.

Last year's total receipts were 1% above the previous record of 1951 and 12% higher than the 1957 total of nearly $29.8 billion.

Cash receipts from livestock and products again led crop receipts, accounting for 56.8% of the total. Livestock and products receipts totalled $18.8 billion compared to nearly $14.4 for crop receipts.

USDA reported that livestock receipts increased 8% over 1957, as a substantial rise in average prices more than offset a slight decline in volume of marketings. A gain of 16% in crop receipts was due, according to USDA, to larger marketings, as average prices remained practically the same. Increased crop marketings reflected record production in 1958 and late harvest of the 1957 crops, with a large carry-over into calendar year 1958.

A third of the states increased their cash receipts less than 5%; 11 states between 5 and 10%; 10 states between 10 and 20%, and 8 states 20% or more. All the gains of 20% and over occurred in the midwestern states and Mississippi. Largest increases were in Kansas, 63%; Oklahoma, 40%, and Texas, 32%.

Increases in livestock receipts occurred in all regions, ranging from 4% in the north Atlantic region to 11% in the west north central area. A gain of 40% in crop receipts occurred in the west north central region, 29% in the south central, 10% in the south Atlantic and 3 or 4% in the remaining regions.

A ranking of states according to the size of their total cash receipts from farm marketings in 1958 again

TABLE 1. Cash Receipts From Farm Marketings by States, January-December, 1957-58

State and region	Livestock and products		Crops		Total	
	1957	1958	1957	1958	1957	1958
	1,000 dol.	1,000 dol.	1,000 dol.	1,000 dol.	1,000 dol.	1,000 dol.
Maine	109,797	114,212	66,989	89,658	176,786	203,870
New Hampshire	51,860	53,764	9,685	9,102	61,545	62,866
Vermont	108,962	104,916	12,513	10,832	115,475	115,748
Massachusetts	108,979	110,668	55,761	58,063	164,740	168,731
Rhode Island	14,536	14,081	5,861	6,404	20,397	20,485
Connecticut	105,549	109,623	55,014	56,259	160,563	165,882
New York	601,634	628,990	228,830	226,268	830,464	857,258
New Jersey	194,859	198,559	125,296	123,420	320,155	321,979
Pennsylvania	577,570	607,831	174,869	180,816	752,439	788,647
North Atlantic Region	1,867,746	1,942,644	734,818	762,816	2,602,564	2,705,460
Ohio	641,014	682,954	352,215	356,458	993,229	1,039,406
Indiana	720,754	818,658	334,188	349,222	1,054,882	1,167,880
Illinois	1,192,804	1,293,954	768,445	804,079	1,961,249	2,098,033
Michigan	402,858	413,053	302,848	309,815	705,706	722,868
Wisconsin	929,343	996,383	123,316	113,218	1,052,659	1,109,601
East North Central Region	3,886,773	4,205,002	1,880,952	1,932,786	5,767,725	6,137,788
Minnesota	945,601	982,140	384,062	378,679	1,329,663	1,360,819
Iowa	1,824,849	2,090,754	339,467	473,054	2,164,316	2,563,808
Missouri	735,488	758,896	873,636	382,601	1,009,124	1,081,497
North Dakota	197,282	225,439	364,276	448,338	561,558	673,777
South Dakota	379,315	449,117	151,351	199,338	530,666	648,455
Nebraska	642,197	684,442	879,340	471,359	921,537	1,155,801
Kansas	412,549	501,069	871,799	613,743	684,348	1,114,812
West North Central Region	5,137,281	5,691,857	2,083,931	2,907,112	7,221,212	8,598,969
Delaware	81,272	82,784	28,467	30,573	109,739	113,357
Maryland	170,337	176,893	78,312	78,211	248,649	255,104
Virginia	246,437	259,415	195,369	197,825	441,806	457,240
West Virginia	88,174	95,387	22,345	20,689	110,519	116,016
North Carolina	267,099	299,658	608,710	697,318	875,809	996,976
South Carolina	99,938	106,721	224,492	225,379	324,430	332,100
Georgia	358,282	395,608	272,737	300,852	631,019	696,460
Florida	170,666	176,309	458,692	533,853	629,358	710,162
South Atlantic Region	1,482,205	1,592,915	1,889,124	2,084,700	3,371,329	3,677,615
Kentucky	284,678	303,966	283,348	260,631	568,086	563,897
Tennessee	249,102	269,230	212,028	216,749	461,130	485,979
Alabama	230,677	267,312	177,823	198,037	408,500	459,349
Mississippi	207,071	270,969	246,582	277,257	453,653	548,226
Arkansas	307,616	236,383	341,682	362,934	549,298	599,317
Louisiana	138,388	163,411	200,827	196,190	339,215	359,601
Oklahoma	294,286	319,086	152,696	308,648	446,982	627,734
Texas	807,234	826,872	907,331	1,467,867	1,734,765	2,294,139
South Central Region	2,419,652	2,657,129	2,542,277	3,288,413	4,961,929	5,939,542
Montana	195,475	278,263	200,482	194,494	395,957	472,757
Idaho	170,654	178,412	187,901	212,883	358,555	391,295
Wyoming	109,658	135,264	30,783	33,685	140,441	168,969
Colorado	304,516	337,395	172,669	228,910	477,185	566,305
New Mexico	120,055	125,670	77,378	94,326	197,633	219,996
Arizona	122,974	130,303	251,473	264,240	374,447	394,543
Utah	117,823	127,840	39,543	35,093	156,766	162,933
Nevada	43,866	41,394	6,140	6,475	50,006	47,869
Washington	306,765	201,023	344,616	355,183	951,381	536,206
Oregon	173,770	173,243	823,608	218,210	397,378	391,453
California	1,017,840	1,027,426	1,714,789	1,746,674	2,732,629	2,774,100
Western Region	2,582,796	2,756,453	3,249,376	3,390,173	5,832,372	6,146,626
United States	17,376,453	18,846,000	12,380,678	14,360,000	29,757,131	33,206,000

DU PONT

Faster gains on less

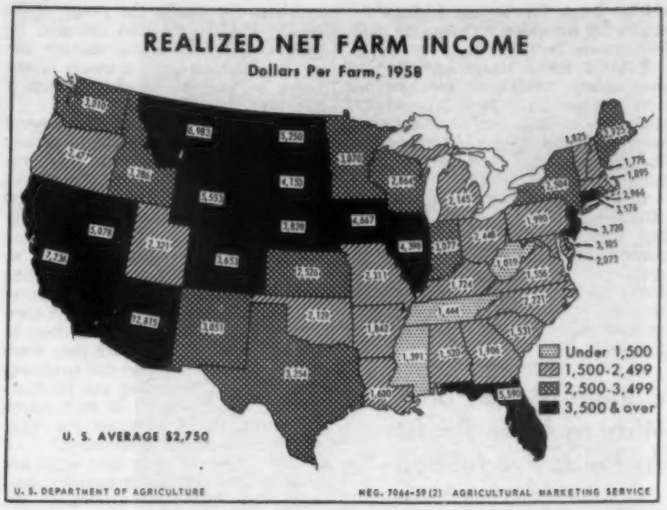
Hydan

trademark

write: E. I. du Pont de Nemours & Co. (Inc.)
Grasselli Chemicals Department, Nutrition & Therapy Section, Wilmington, Delaware

Atlanta 8, Ga., 739 W. Peachtree St.

Cleveland 14, Ohio, 1321 Nat'l City Bank Bldg.



puts California first and Iowa second, as in the past 11 years, with totals of nearly $2.8 billion and $2.6 billion, respectively. Texas rose from fourth to third place, with about $2.3 billion, and Illinois dropped to fourth place with a total near $2.1 billion.

A detailed summary of cash re-

TABLE 2. Preliminary 1958 Cash Receipts Per Acre and Per Farm Listed by Rank of States (Source: New Jersey Crop Reporting Service, Trenton, N.J.)

State	Rank	Cash receipts per acre*	State	Rank	Cash receipts per farm**
New Jersey	1	$195	Arizona	1	$42,882
Connecticut	2	148	California	2	22,729
Delaware	3	141	Delaware	3	18,297
Rhode Island	4	133	Nevada	4	16,979
Massachusetts	5	118	Wyoming	5	15,319
Iowa	6	77	Montana	6	14,688
California	7	74	Colorado	7	14,405
Illinois	8	70	New Jersey	8	14,313
Maryland	9	67	Iowa	9	13,597
Indiana	10	63	Connecticut	10	13,183
Pennsylvania	11	61	Florida	11	12,482
Maine	12	57	Illinois	12	12,187
New York	13	57	Nebraska	13	11,827
North Carolina	14	57	North Dakota	14	11,317
Ohio	15	54	New Mexico	15	11,075
Wisconsin	16	50	South Dakota	16	10,772
Michigan	17	45	Idaho	17	10,366
New Hampshire	18	44	Rhode Island	18	10,260
Minnesota	19	43	Massachusetts	19	9,816
Florida	20	40	Kansas	20	9,568
Vermont	21	35	Maine	21	8,797
Arkansas	22	35	Washington	22	8,634
Louisiana	23	34	Minnesota	23	8,489
Missouri	24	33	Texas	24	8,248
Kentucky	25	33	New York	25	8,195
South Carolina	26	33	Maryland	26	8,016
Washington	27	32	Indiana	27	7,851
Virginia	28	32	Utah	28	7,383
Georgia	29	31	Wisconsin	29	7,354
Mississippi	30	29	Vermont	30	7,319
Tennessee	31	29	Oregon	31	7,309
Idaho	32	28	Pennsylvania	32	6,204
Nebraska	33	25	New Hampshire	33	6,091
Alabama	34	24	Ohio	34	6,061
Kansas	35	23	Missouri	35	5,667
Oregon	36	19	Oklahoma	36	5,600
Oklahoma	37	19	Michigan	37	5,388
North Dakota	38	17	Georgia	38	4,500
Texas	39	17	Arkansas	39	4,352
West Virginia	40	16	North Carolina	40	3,861
Colorado	41	15	Louisiana	41	3,503
South Dakota	42	15	Virginia	42	3,423
Utah	43	14	Kentucky	43	3,032
Arizona	44	10	South Carolina	44	2,940
Montana	45	8	Alabama	45	2,841
Nevada	46	6	Mississippi	46	2,745
Wyoming	47	5	Tennessee	47	2,521
New Mexico	48	5	West Virginia	48	1,722
U. S.		30	U. S.		7,171

*Based on acreage in farms from 1954 Census of Agriculture.
**Based on number of farms from 1954 Census of Agriculture.

"Lotta dozen" Says

Push 'Em... More Dealers Do!

"I've seen it myself. Lots of these keen-witted, sharp-eyed, fast-peddling farm dealers just haven't stopped to think that there just might be a real whiz-bang seller in the oyster shell field.

"Have you ever considered why EGGSHELL BRAND Oyster Shell is a top-seller in the industry?

"Could be it's the downright digestible nature of EGGSHELL BRAND. Real palatable to a hungry hen, you know, this pure, soft reef shell.

"Or, maybe it's only because these EGGSHELL BRAND folks just promote the dickens out of their product . . . talking it up in the trade papers . . . always settin' up counter displays . . . and, in general, helping to make sales easy.

"On the other hand, it may be even simpler than that. Might be that dealers prefer 'em because poultrymen prefer 'em. And poultrymen prefer 'em because hens prefer 'em.

"Pretty tricky of us hens, I'd say."

EGGSHELL BRAND OYSTER SHELL
a product of
OYSTER SHELL CORPORATION
BALTIMORE, MARYLAND

A. E. BAXTER ENGINEERING CO.
Designers and Engineers for Mills, Elevators and Feed Mills
1311-1315 GENESEE BUILDING BUFFALO 2, NEW YORK

ADVERTISING CAPS for . . .
the Most in Publicity and Good Will
Write Us for Samples and Prices
MINNESOTA SPECIALTY CO., INC.
121 N. 4th St., Minneapolis, 1, Minn.

feed with the new, lower-cost source of methionine...

feed supplement

METHIONINE HYDROXY ANALOGUE CALCIUM 90%

Houston 25, Texas, 1100 E. Holcombe Blvd.
Minneapolis 2, Minn., 1207 Foshay Tower
Palo Alto, California, 701 Welch Road
Wynnewood (Phila.), Pa., 308 E. Lancaster Avenue
In Canada: Du Pont of Canada Limited. P. O. Box 660, Montreal, Quebec

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

Hetrogen K is available as an easy to use premix and as a free flowing concentrate. Recommended for medication of drinking water. For complete information, write or call collect:

HETEROCHEMICAL CORPORATION,
111 E. Hawthorne Avenue Valley Stream, Long Island, N.Y. LOcust 1-8225

NEW BULKANIZER GIVES YOU NEW DESIGN, NEW CAPACITIES, NEW DELIVERY EFFICIENCY

Offers you the advantages of a custom built body at mass production prices

New design — New, four-foot sectional body design makes available, as standard units, 8-12-16-20- and 24-foot bodies. Steep V design assures complete unloading without sweeping or scooping. Wide, all steel "carrier" catwalks let you transport bagged feed or supplements. All steel weather tight doors individually operated for each compartment. Open and close without loss of clearance.

New capacities — Bulkanizer bodies available in a wide range of new capacities from the 8-foot body with a capacity of 10,000 lbs. to the 24-foot body with a capacity of 30,000 lbs. Discharge auger unloads up to 1200 lbs. per minute.

New delivery efficiency—New compartment design means you can haul several different types of feed on one delivery run. A long discharge elevator will unload straight up. Makes high openings easy to reach and fill. Large capacity hydraulic pump makes raising and lowering elevator simple and easy. Fully enclosed worm gear swivel rotates entire auger system 360°. Pump and swivel coordinated to maneuver elevator into any position.

Bulkanizer bulk feed truck bodies are sold and serviced nationally by authorized Bulkanizer dealers. See your dealer soon or write today for information.

Bulkanizer

NORTH AMERICAN MFG. CO.
SIOUX CITY, IOWA

★ Buy and Sell Through WANT ADS ★

ceipts from farm marketings by states for the calendar years of 1957-58 appears in Table 1.

Table 2 ranks states according to preliminary 1958 cash receipts per acre and per farm. New Jersey holds the lead in the per acre category with $195 and Arizona is ranked at the top in cash receipts per farm with a figure of $42,882.

Realized net income of farmers in 1958—the amount available for spending after paying all production expenses—rose to $13.1 billion, an increase of $2.2 billion or 20% from 1957. The accompanying chart-map shows a state-by-state comparison of realized net farm income per farm for 1958.

College Tests Point Way to More Profit In Poult Production

BLACKSBURG, VA.—Tests at various agricultural experiment stations may help point the way to more profitable production of turkey eggs, a Virginia Polytechnic Institute poultry specialist reports.

Denver D. Bragg said to produce poults economically, breeder flocks must be managed and hatching eggs must be handled to give at least 85% fertility and a hatchability of 70% or more of the total eggs set.

To achieve or surpass such standards, he said, the producer must breed selected stock, must use good flock management practices, take proper care of the hatching eggs and use approved incubation methods.

Recent tests indicated, he said, that the feeding of a 12 to 14% protein ration to breeder hens gives better results than feeding a 16% protein ration before the breeding season, but that during the breeding season a good 18% protein ration should be used. These tests also indicate that the feeding of the lower protein ration before the breeding season gives increased fertility and egg production.

"Several authorities also report that although there is little or no change in egg production, there may be as much as 4 or 5% better hatchability of all eggs set when 50 to 100 gm. of a wide spectrum antibiotic is used in the ration during the production period," he said.

He also cited work at Western Washington Agricultural Experiment Station which shows that mating is depressed when air temperatures are consistently outside the range of 50 to 85° F. Reports also indicate, he said, that with natural mating the use of a second shift of males in the latter part of the breeding season is not wise.

"Another report from Washington indicates that rapid cooling of turkey eggs is not necessary, but that preheating eggs before setting improves hatchability and narrows the period during which the poults are actually hatched," he said. "This preheating consisted of warming the eggs to room temperatures shortly after they were gathered and placing them in the incubator for two hours, and then taking them out and placing them in the egg-holding room until they were placed in the incubator for hatching. One study showed that the preheated eggs gave a total of 80% hatch compared to 76% hatch for eggs which received no preheating."

The length of time that eggs are held before setting frequently does not receive enough attention, Mr. Bragg said. Turkey eggs should never be kept longer than two weeks before setting, and according to some tests there is as much as 8% difference in the hatchability of eggs kept two weeks compared to those kept only one week before being placed in the incubator, he pointed out.

He also advocated an all-mash ration for breeders, stating that "it takes the guess-work out of feeding." With a good breeder ration, the nutrient needs are better met for each turkey, he said.

Citing records which show that hatchability generally drops after the first 10 or 12 weeks of production, he said Texas studies show that adding vitamin E to the diet will help maintain higher hatchability. He also quoted Washington State College studies which indicate that some lowering of hatchability will occur after the 40th egg unless there is fortification of the diet with supplemental vitamin E.

Canada Egg Output Up

WINNIPEG—Production of eggs in Canada (excluding Newfoundland) in February increased by 3.1% to 37,754,000 doz. from 36,610,000 a year earlier. This raised the January-February output by 1.5% to 79,291,000 doz. compared with 78,148 000 a year ago. Average number of layers in February increased to 30,309,000 from 29,270,000, and the average number of eggs per 100 layers to 1,505 from 1,501.

MORE GRANITE LESS DUST

SUPREME RI-STONE REG. U.S. PAT. OFF. SHARP-INSOLUBLE

GRANITE GRIT

FEED MERCHANTS Reap Greater Profits with the Fastest Growing Poultry Grit in America.

Ri-Stone promotes healthier birds, faster growth, lower feed costs. Your inquiries invited.

Get Ri-Stone in the economical 80 lb. bags. A size for all ages. Fine, Medium, Coarse and Turkey sizes.

Fine Aggregate Division

RION CRUSH STONE CORP., Rion, S. C.

QUARRIERS OF GRANITE FOR OVER 70 YEARS.

Plenty of **vitamin A** here

If your feeds go through a pelleting mill, you'll be smart to keep an eye out for vanishing vitamin A.

The heat of pelleting can give dry vitamin A preparations a rough time. Moisture doesn't help much, either. Pelleting may rupture or crush the protection against oxygen and minerals in the mix. Then potency begins to drop. By the time the pellets are fed, the vitamin A level may be way down.

There's only one way to minimize this risk. Make sure the vitamin A you put into the feed is as stable as vitamin A can be.

You get this kind of stability in *PGB-250 Dry Vitamin A*. Tests in six different mills showed an average vitamin A recovery of 92% from feeds fortified with PGB-250, pelleted, and in storage or transit for a week to 10 days.

—but how about here?

Three months later these same feeds, stored at 100 F and at 58% relative humidity, still had higher vitamin A levels than feeds fortified with other dry vitamin A products.

To insure the maximum protection in your feeds, right through the pellet mill and up to feeding time, fortify with *PGB-250 Dry Vitamin A*, or specify it in the pre-mix, concentrate, or mineral mixture you buy. *PGB-250 Dry Vitamin A* comes in the form of free-flowing golden orange spherical particles sized 30 to 120 mesh. It contains 250,000 U.S.P. vitamin A units to the gram. For a sample or a quotation, write ***Distillation Products Industries,*** Rochester 3, N. Y. Sales offices: New York and Chicago • Charles Albert Smith Limited, Montreal and Toronto.

leaders in research and production of vitamins A and E

DPi

Also... distilled monoglycerides... some 3700 Eastman Organic Chemicals for science and industry

Distillation Products Industries *is a division of* **Eastman Kodak Company**

Official USDA Turkey Report Shows 78 Million Birds Produced in 1958

WASHINGTON — The official report on 1958 turkey production has been released by the U.S. Department of Agriculture.

Production in 1958 totaled 78 million birds—4% less than the 81 million produced in 1957. Turkey production was down in all regions except the north central, where it was up 4%.

California was again the leading state with 13.6 million turkeys raised in 1958, followed by Minnesota with 10.5 million. Iowa raised 6.8 million; Virginia, 6.5 million; Texas, 3.7 million; Ohio, 3.2 million; Missouri, 3.1 million, and Indiana, 3 million. These eight states accounted for 64% of the turkeys raised in 1958.

The West North Central states—the largest producing area in the U.S.—raised about 30% of the nation's turkeys in 1958; the West, 26%; the South Atlantic, 15%; the East North Central, 14%; the South Central, 11%, and the North Atlantic, 4%.

Turkey growers raised 66.1 million heavy breed turkeys in 1958—3% less than in 1957. They raised 12.2 million light breed turkeys, a decrease of 8%. Of the turkeys raised in 1958, 84% were heavy breeds and 16% light breeds. In 1958, heavy white breed turkeys accounted for 21% of all heavy breed turkeys raised.

Turkeys sold in 1958 totaled 77 million—4% less than in 1957. Growers indicated that during 1958 they sold 82% of the light breeds, 36% of the heavy whites and 1% of the bronze and other heavy turkeys as fryer-roasters.

The average price received for turkeys sold in 1958 was 23.9¢ lb. liveweight, compared with 23.4¢ in 1957.

Cash receipts from the sale of 1,316 million pounds live weight of turkeys in 1958 totaled $314 million—the same as in 1957. The decrease in pounds of turkeys sold was offset by the increase in average price received by growers.

Death loss of poults in 1958 was 8.6% of those started, compared with 9.7% in 1957. Loss of breeding stock as a percent of breeders on hand Jan. 1 was 6.6%, compared with 6.0% in 1957.

Turkeys Raised, by States, 1958

(000's omitted)

State and division	Raised* Heavy breeds	Raised* Light breeds	Raised* Total
Maine	94	4	98
New Hampshire	121	2	123
Vermont	71	1	72
Massachusetts	462	10	472
Rhode Island	27	1	28
Connecticut	219	6	225
New York	646	12	658
New Jersey	150	13	163
Pennsylvania	1,158	156	1,314
No. Atlantic	2,948	205	3,153
Ohio	2,462	691	3,153
Indiana	2,539	478	3,017
Illinois	981	113	1,094
Michigan	853	149	1,002
Wisconsin	2,649	128	2,777
E. N. Central	9,484	1,559	11,043
Minnesota	9,313	1,226	10,539
Iowa	5,929	875	6,804
Missouri	2,957	174	3,131
No. Dakota	682	24	706
So. Dakota	676	32	708
Nebraska	1,055	24	1,079
Kansas	710	38	748
W. N. Central	21,322	2,393	23,715
Delaware	113	399	512
Maryland	241	87	328
Virginia	2,021	4,455	6,476
West Virginia	477	916	1,393
No. Carolina	1,557	196	1,753
So. Carolina	880	14	894
Georgia	283	1	284
Florida	165	97	262
So. Atlantic	5,737	6,165	11,902
Kentucky	334	23	357
Tennessee	170	17	187
Alabama	203	103	306
Mississippi	187	20	207
Arkansas	2,044	337	2,381
Louisiana	42	0	42
Oklahoma	847	187	1,034
Texas	3,320	400	3,720
So. Central	7,147	1,087	8,234
Montana	18	1	19
Idaho	179	35	214
Wyoming	6	0	6
Colorado	1,312	14	1,326
New Mexico	74	6	80
Arizona	100	...	100
Utah	2,591	207	2,798
Nevada	2	...	2
Washington	508	7	515
Oregon	1,462	141	1,603
California	13,231	408	13,639
West	19,483	819	20,302
U. S.	66,121	12,228	78,349

*Does not include your turkeys lost.

HOLDS OPEN HOUSE

ROCK SPRINGS, WIS.—The Rock Springs Farmers Cooperative held an open house recently to permit public inspection of its enlargement program, which includes installation of facilities for bulk mixing of feeds and concentrates, as well as loading facilities.

FEEDSTUFFS reprints

The following reprints of articles which have appeared in Feedstuffs may be obtained on order from Feedstuffs' Reader Service Department:

1. **Use of Linear Programming in Feed Manufacturing**—A series of seven articles—by Dr. R. F. Hutton, Pennsylvania State University $1.00
2. **Custom Feed Milling**—a series of five articles—by Al P. Nelson, Feedstuffs special writer 50c
3. **Mobile Feed Milling**—a series of five articles—by Al P. Nelson 50c
4. **Feed Industry Research**—by Dr. H. E. Bechtel, General Mills, Inc. 20c
5. **Highlights of the Past 50 Years in Swine Nutrition and Feeding**—by Dr. L. E. Hanson, University of Minnesota 20c
6. **Advances in Dairy Cattle Feeding During the Past 50 Years**—by Dr. C. F. Huffman, Michigan State University 20c
9. **Amino Acids in Animal Nutrition**—series of five articles by industry, college and government scientists 50c
12. **Protein and Amino Acid Nutrition of the Laying Hen**—by Dr. Hans Fisher, Rutgers University 20c
13. **Integration . . . and the Feed Industry**—by Dr. G. B. Wood, Oregon State College 20c
14. **Pelleting Feeds for Beef Cattle and Sheep**—by Dr. L. S. Pope, Oklahoma State University 20c
15. **Fifty Years of Progress in Turkey Nutrition**—by Dr. M. L. Scott, Cornell University 20c
16. **Methods of Controlling Bloat in Cattle and Sheep Grazing Legume Pastures**—by Dr. B. F. Barrentine, Mississippi State College 20c
17. **How to Make a Grain Bank Pay**—by John E. Bonnett, Bonnett Feed & Grain Co., Bushnell, Ill. 20c
18. **Ideas for Feeding Growing-Finishing Swine in Confinement**—by Dr. T. J. Cunha, University of Florida ... 20c

FEEDSTUFFS
Reader Service Department
P.O. Box 67
Minneapolis 40, Minn.

Please send .... copy(ies) of the following reprints for which payment is enclosed:

1 2 3 4 5 6 9 12 13
14 15 16 17 18

(Check code number of reprint desired)

NAME .....

TITLE .....

COMPANY .....

ADDRESS .....

CITY ..... ZONE ..... STATE .....

Note to Feed Retailers:

Boost your feed sales... and your customer goodwill... by promoting the National Cotton Council's 1959 Cotton-Feed-Bag-Sewing Contest. Use the page opposite this as a window or wall poster in your store... and send the coupon if you can use additional free posters. Bemis is doing this as an aid to the Feed Industry and the National Cotton Council.

Bemis Bro. Bag Co.
408 Pine Street,
St. Louis 2, Missouri

Please send_____Cotton-Feed-Bag-Sewing-Contest posters for display in our store.

Store Name_____

_____

Your Name_____

_____

Brands of Feed You Sell_____

_____

Address_____

_____

City_____ State_____

You have the sewing skill
we have the cotton bags
ENTER THE 1959
$18,000.00-COTTON-
BAG-SEWING CONTEST
Winners at State and Regional Fairs are eligible for dozens of wonderful National prizes, including *free vacation* in Hollywood, California.
Eight contest classifications, from pot holders to play suits. Try one . . . or all. No entry fee.
For folder with location and dates of YOUR fair, list of prizes and contest rules, mail card or letter promptly to:
CONTEST DEPARTMENT
National Cotton Council of America
P. O. Box 9906
Memphis 12, Tennessee

DIGESTIVE UPSETS ARE COSTLY!

Prevent Them by Adding

NU-CUD

to YOUR Feed!

Many things can cause digestive upsets in diary cattle but, unfortunately, the feed usually catches the blame. Prevent this with a small amount of NU-CUD added to your feed—only one pound needed for each ton of feed.

NU-CUD gives these important advantages:

1. It prevents most digestive upsets.
2. It assures better digestion through all seasons of the year.
3. It keeps cows "on feed" through stress periods.
4. It provides the necessary rumen bacteria to put cows back on full feed quickly following disease.
5. It assures more complete utilization of feed and permits profitable use of low-grade roughage.

For NU-CUD mixing instructions and prices, write:

A Specially Prepared Formula of LIVE RUMEN ORGANISMS for Dairy Cattle, Calves, Sheep and Goats

Shipped in 50 lb bags

Dr. LeGear, Inc. • 4121 Beck • St. Louis 16, Mo.

For well-balanced nutritive feeds MIX

PRODULAC

CORN DISTILLERS SOLUBLES WITH GRAINS

BOTH GRAIN FERMENTATION PRODUCTS

NADRISOL

CORN DISTILLERS DRIED SOLUBLES

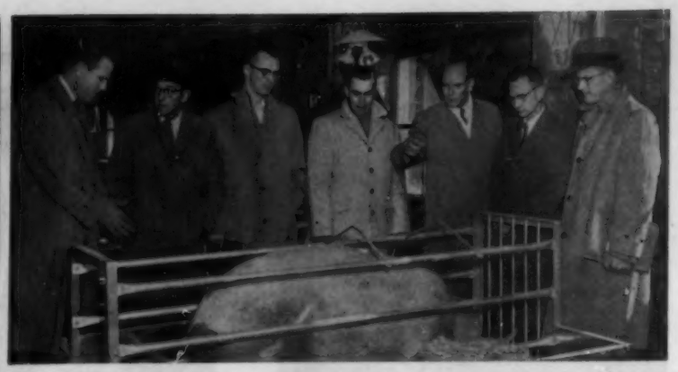
These economy fortifiers are rich in proteins, vegetable fats, and highly nutritious. They also contain essential Vitamin B-G Complex factors, as well as unidentified growth factors. Mixing Nadrisol or Produlac in your formula feeds will promote quicker growth, greater meat and egg yield and will produce feeds your customers want to buy. It's a good way to gain and hold customer acceptance.

Sold only to manufacturers of formula feeds.

NATIONAL DISTILLERS PRODUCTS COMPANY

GRAIN PRODUCTS SALES

99 PARK AVENUE, NEW YORK 16, NEW YORK



FEED SEMINAR—Representatives of several feed manufacturers and staff members of Hess & Clark, Inc., Ashland, Ohio, are shown inspecting a new farrowing stall used in the company's swine research. The picture was taken during the first of a series of feed seminars for the firm's feed fortification customers. Shown are (left to right): William A. Gauntt, Hess & Clark; Richard McConnell, Coshocton (Ohio) Farmers Exchange; Mac Blair, Waynesburg (Pa.) Milling Co.; Harold Zigler, Seville (Ohio) Elevator; Baron R. Dana, Hess & Clark; William Archbold, Coshocton Farmers Exchange, and Charles Blair, Waynesburg Milling Co.

Hess & Clark Holds First Feed Seminar

ASHLAND, OHIO — Representatives of several feed manufacturers recently attended a feed seminar sponsored by Hess & Clark, Inc., Ashland. It was the first in a series of such seminars planned for the firm's feed fortification customers.

The purpose of the seminar was to provide a general background on three phases of the feed business and to stimulate thinking on how they apply to the sale of manufactured feeds. William A. Gauntt, Hess & Clark nutritionist and seminar chairman, said this included development, manufacture and practical application of nutrition and feed formulation, feed medication and animal health package products.

Special "how to" sessions during the seminar were: (1) How to apply quality control and suppliers facilities to the sale of finished feeds; (2) how to apply the sale of feed medication programs to feed selling; (3) how to apply formula and nutrient knowledge to feed selling, and (4) how to apply package medication products to the sale of feeds.

INSTALLS BULK PLANT

GIBBON, MINN. — Goodman's Produce, Gibbon, has completed installation of its new bulk feed plant. It is equipped with automatic scales, storage tanks of 42-ton capacity and equipment to deliver directly into customers' feeders.

Exhibit Area Expanded For APHF Exposition

KANSAS CITY, MO.—An expanded exhibit area has been designed to accommodate a record 186 exhibitors at the American Poultry Congress & Exposition sponsored by the American Poultry & Hatchery Federation. The event is to be held in St. Louis at Kiel Auditorium July 21-23.

During the initial space sale, 155 firms reserved the original 85,000 sq. ft. of space laid out for the 43rd annual meeting, according to an APHF announcement. All of the displays will be housed in the exhibit hall on one floor level.

The APHF congress this year will include the first annual meeting of the National Egg Council.

Hotel reservations, now being accepted, may be obtained by writing the Convention Reservations Bureau, APHF, 911 Locust St., Room 406, St. Louis 1, Mo. Reservations should specify first, second and third choice hotels and include time of arrival, departure and accommodations desired.

WHY GRAIN, FEED and SEED MEN LIKE

SEEDBURO Portable HYTROL Folding Conveyors

These versatile conveyors are so completely flexible in use that every stacking or loading job can be done with a maximum of worker satisfaction and a minimum of time and labor.

Check these features:

Model "R" Hytrol
- Lightweight, sturdily constructed
- Ruff-Top belt for longer life
- Loads at floor level
- Reversible at flip of switch
- Sizes—10 to 21 ft.

Model "B" Hytrol
- Handles 150 lb. bags, boxes, cartons
- Elevates hydraulically to 45 degrees
- Ruff-Top belt, with or without cleats
- Reversible at flip of switch
- Sizes—10 to 22 ft.

MODEL "R" HYTROL
A lightweight aluminum folding conveyor for complete portability.

MODEL "B" HYTROL
A heavy-duty portable, folding conveyor, built for long life.

BOTH MODELS FOLD IN HALF

"See your Seedburo Representative"

OR CALL COLLECT ANdover 3-2128

SEEDBURO

(SEED TRADE REPORTING BUREAU)

EQUIPMENT COMPANY

Dept. FS-4, 618 W. Jackson Blvd., Chicago 3, Ill.

Light Affects Yield, Quality of Forage

WASHINGTON—The intensity of light may limit the yield of well-managed forage crops, according to cooperative studies by the U.S. Department of Agriculture and the University of Georgia.

Glenn W. Burton and James E. Jackson of USDA's Agricultural Research Service, and Franklin E. Knox of the Georgia station believe, for example, that light conditions at the site of the experiment (Tifton, Ga.) may set the ceiling on annual production of Coastal Bermuda grass at 12 tons of dry matter per acre, no matter how much fertilizer and water are applied.

Their findings also help to explain the belief of many livestock producers that cattle make poorer gains during rainy, cloudy weather. In attempting to account for the poor performance of cattle during these periods, feeders have sometimes placed the blame on the increased amount of water in the forage.

The research at Tifton showed that shade increased the moisture content of forage about 8%, and that water adhering to the surface of the grass further increased the amount of water ingested by the animals.

Of greater importance from the standpoint of animal weight gains, however, may be the sharp decrease in available carbohydrates and the increase in lignin, a woody plant material, which in turn should decrease the digestibility of all constituents in the herbage, the researchers noted. Animals consuming such forage could be expected to make poorer gains, they said.

At moderate fertility levels of the type generally used in the Georgia area (less than 200 lb. of nitrogen per acre), a one third reduction of sunlight with artificial cotton-cloth shading did not greatly affect the yield, persistence, or chemical composition of Coastal Bermuda.

Increased shading, obtained with two and three layers of cotton cloth, resulted in higher moisture content, lignin, crude protein, phosphorus, calcium, and magnesium of green grass. Intense shading had no effect on cellulose, but decreased available carbohydrates to 57% of normal.

At very high nitrogen levels, shading—which reduced light to one third that of sunlight—lowered the available carbohydrates to 76% of normal but raised the phosphorus content.

Egg Law Enforcement Starts in Delaware

DOVER, DEL.—Delaware's State Board of Agriculture has announced that routine inspections for enforcement of the state's egg grading and marketing law and regulations were started April 1, following an educational program it has been conducting in recent months.

Under the law, eggs sold at established places of business away from the premises of the producer must be designated as to size and quality with plain lettering on the carton, box or other container.

Persons selling eggs to retailers, restaurants, hotels, etc., are required to furnish a signed and dated invoice or candling certificates showing the size and grade. The retailer is made responsible for having eggs properly identified before displaying them for sale to consumers.

Producers are exempt from the regulations provided they sell eggs produced by their own flocks on their own premises and further provided that the eggs are not advertised or displayed to the public with price, size or quality designation.

FEED MILL SOLD

DENNISON, MINN.—Directors of Dennison Cooperative Elevator Co. have decided to accept a bid from Erickson & Stadstad of Farmington and Cannon Falls, Minn., for the purchase of the elevator and feed mill at Dennison. The change in operation is expected to take place June 1, the close of the fiscal year for the cooperative.

OPPORTUNITY
FOR
SALES MANAGER

Who Knows Modern
HOG FEEDING

This is a ground-floor opportunity for a man who has the following qualifications:

1. Must be up to date on modern hog feeding techniques.
2. Must be low pressure but thorough salesman able to contact feed distributors and mixers.
3. Must be able to analyze territories and set up profitable distribution.

The Pannier line of Bulk Feeders is designed for the professional hog raiser, and they are indispensable to the bulk feeding operation. The line consists of seven models ranging in capacity from 10 tons bulk feed or 440 bu. shell corn to 500 lbs. plus a combination pig and sow feeder.

Eleven years of development and practical on-the-farm experience is back of this rugged line.

The right man will have an attractive proposition for substantial earnings and he will be backed by an adequately financed company and a sound sales promotion program.

WRITE
(Do not call or phone)
PANNIER BULK FEEDER, Inc.
808 E. LOCUST ST.
BLOOMINGTON, ILLINOIS

★ Buy and Sell Through WANT ADS ★

CHAMPION
MOBILE MILL EQUIPMENT

More Capacity—more labor-saving features—more dependable performance—makes MORE on-the-farm business for you . . .

Fast and accurate grinding action with Champion's larger 2- to 3-ton mixing capacity processes a high tonnage of top-quality formula feed *at a lower cost per ton* than units of smaller volume.

More than two tons of bagged concentrates can be hauled on this Champion unit, to save you extra truck- and man-hour expense. And you'll save the expense of an auxiliary feeder with Champion's sheller arrangement because ear corn and grain are conveniently fed by the same feeder which feeds the hammermill unit. Ear corn is diverted into the sheller or into the mill unit as desired, through the use of a simple control valve in the feeder head.

Champions are built with more capacity, more labor-saving features and more dependable performance, to provide you with more and better on-the-farm service—day after day, all year 'round. With a Champion you get more for your money, too, because Champion leadership brings you this unit at the industry's most fair and honest price.

Champions Are Built to Build YOUR Business

CHAMPION PORTABLE MILL CO.
2109 COMO AVE. SOUTHEAST • MINNEAPOLIS 14, MINNESOTA

Make Your Customers
GOOD Customers . . . all year 'round

SUPREME Brand
Condensed BUTTERMILK

HERBERT K. CLOFINE, Inc.
MILK PRODUCTS
315 South Smedley St. Phila. 3, Pa.

MOO--ORE
NEWS IN
FEEDSTUFFS

Hoffman
for vitamins
Hoffman-Taff Inc.
SPRINGFIELD, MISSOURI

KEES & COMPANY
Processors of DRIED FISH SOLUBLE PRODUCTS
A "MUST" IN EVERY SWINE OR POULTRY RATION
Call or write for complete information and price
337 S. La Salle St., Chicago 4, Ill. Phone HArrison 7-1525

Economists Investigate 'Demand Expansion' Solution for Surpluses

ST. PAUL, MINN. — Farm surpluses can't be completely eliminated by getting American people to eat more, but the "demand expansion" approach could at least be a partial cure for some of the nation's problems with surpluses.

This is the conclusion of a team of agricultural economists at the University of Minnesota after an extensive national study, according to a recent report. J. M. Wetmore, M. E. Abel, E. W. Learn and W. W. Cochrane based their report on a close study of three types of demand expansion proposals: Supplementing consumer income for food needs. Reducing food prices. Making everybody's diet nutritionally adequate.

The economists concluded that at realistic levels, demand expansion approaches would use up no more than one third of current surplus resources in U.S. agriculture.

They did not deal with specific programs, the report said. They based their predictions on expected outcome if certain objectives under the three different approaches were successfully achieved.

Pointed out as examples of programs using the "demand expansion" approach are the Food Stamp plan of the late '30s and the current School Lunch program.

Possible Programs

First, the economists asked what would happen if low-income families were enabled to eat more and better food. For example, if consumption of families with incomes under $500 per person was increased to the level now enjoyed by families earning between $500 and $750 per capita, total consumption would increase by only 2.8%, they said. In terms of farm resources used for production of domestic food needs, this would be a 2.8% increase. Total surplus expressed in terms of these farm resources is about 8%, they reported.

By following the price reduction approach, the economists found that all retail food prices would need to be cut 20% to get a 5.2% boost in use of farm resources for domestic food needs. But if the retail price cut were only 10%, the result would be only a 2.4% increase in resource use. Again, either level would fall short of using up all surpluses.

There would be a slightly larger increase in farm resource use from reducing retail prices of livestock products alone, the economists said. This is because a pound of food in livestock products uses up more farm resources than would a pound of potatoes, flour, fruits or vegetables.

Making everybody's diet nutritionally adequate could actually lead to less overall food consumption and less farm resource use for production of domestic food supplies, it was reported. The reason is that one of the major nutritional problems in the U.S. is overeating and overall nutrient shortages in American diets are small.

No matter how it would be done, the nutrition approach would result in small, if any, consumption increases, according to the economists. Furthermore, either supplementing

"WHERE IS IT?"
Schenley
Corn Distillers
Dried Grains
are a popular protein supplement for dairy cows and are a favorite ingredient in concentrate mixture for cattle. This includes GFF, the Grain Fermentation Factor and SCHENLEY CORN DISTILLERS DRIED GRAINS are especially valuable for milk production when other feeds in the ration are low in fat. They are always fairly and realistically priced. Write or wire to-day.
Member of The Distillers Feed Research Council
Schenley Distillers Inc.
FARM FEED DIVISION
26 East Sixth Street
Cincinnati 2, Ohio
Telephone MAin 1-3170

Arch Lightbody is one of 800,000 Americans cured of cancer because they went to their doctors in time. They learned that many cancers are curable if detected early and treated promptly. That's why an annual health checkup is your best cancer insurance.
American Cancer Society

John F. Farley

APPOINTMENT—John F. Farley has been appointed as Hudson Pulp & Paper Corp.'s district manager for multiwall bags in the greater New York area. Mr. Farley has had extensive multiwall experience, and prior to his new assignment was employed by Hudson as a specialist in the development and introduction of new bag types and constructions. The announcement of his appointment was made by B. C. Drumm, sales manager of Hudson's multiwall bag department.

income or reducing prices would, by themselves, remove much of the current nutritional shortages.

Varying Effects

The three different approaches would have varying effects on surpluses of different foods. The economists say that if incomes of low-income consumers were subsidized for food needs, consumption of livestock products, fruits and vegetables would increase while less dry beans, peas and grain products would be consumed. Results would be similar under the price reduction approach. If meat prices alone were dropped, for example, meat consumption would go up but consumption of most other kinds of food would decline.

The economists based most of their food consumption potentials on data from a 1955 U.S. Department of Agriculture household food consumption survey. The study was conducted in cooperation with other land grant universities and the USDA. It is reported in Technical Bulletin 231, "Policies for Expanding the Demand for Farm Food Products in the U.S." recently issued by the University Agricultural Experiment Station.

Dr. L. S. Ellis Resigns Position at Arkansas

FAYETTEVILLE, ARK.—Dr. Lippert S. Ellis, dean of the college of agriculture at the University of Arkansas, has resigned effective July 1. Dr. Ellis has served in the post since 1946. He will be succeeded by Dr. John W. White, associate director of the Arkansas Agricultural Experiment Station.

Dr. Ellis will begin a one-year leave of absence on July 1, and will be reassigned as a professor of agricultural economics when he returns to the university in 1960.

New Mexican Firm

NIAGARA FALLS, N.Y.—The formation of a new company in Mexico, Hooker Mexicana, S.A., to manufacture and market phosphates in Mexico has been announced by Thomas E. Moffitt, president of the parent firm, Hooker Chemical Corp., Niagara Falls.

Warning Issued on DDT in Apple Pomace

AMHERST, MASS.—The Massachusetts Feed Control Service has issued a warning that it will sample all lots of dried or wet apple pomace found being sold as dairy feed, and that if the amounts of DDT found warrant it, the cases will be referred to the division of food and drugs, Massachusetts Department of Public Health.

George A. Michael, director of the division, said that all such lots of apple pomace will be seized, and that any milk containing DDT will be seized also.

The Feed Control Service recently sampled two lots of dried apple pomace. One lot contained 56 ppm (parts per million) DDT; the other lot, 55 ppm. It was reported that if pomace with this amount of DDT is fed to dairy cows, DDT will appear in the milk.

SOLUBLE NUTRIENTS, INC.

fermenters of solubles since 1952

"VIVO" BRAND ANIMAL AND POULTRY FEED SUPPLEMENTS

A DEPENDABLE SOURCE OF ALL THE UNIDENTIFIED FACTORS PLUS KNOWN WATER SOLUBLE ENTITIES

TECHNICAL SALES OFFICE
FOREST H. CLICKNER & ASSOC.
53 W. JACKSON BLVD.
CHICAGO, ILL. PHONE WE 9-0797

MAIN OFFICE
4701 FULLERTON AVE.
CHICAGO, ILL. PHONE HU 9-3400

The Mill to use

If You're in Business to Make Money

JAY BEE

by providing products and service that win and keep customers . . .

SUPER-MATIC

MODEL SM

HAMMERMILL

with instant electrical (or manually operated) remote control screen change

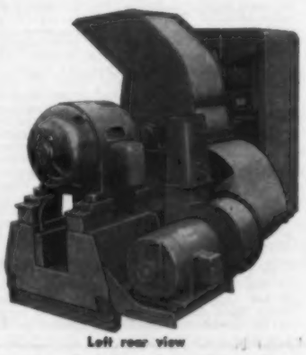
Four electrically operated, push-button control screen changes—without stopping the mill. (Screens can also be changed manually at the mill or from any desired above-floor location.)

Separate motor-driven fan—all the power of the mill motor goes into grinding.

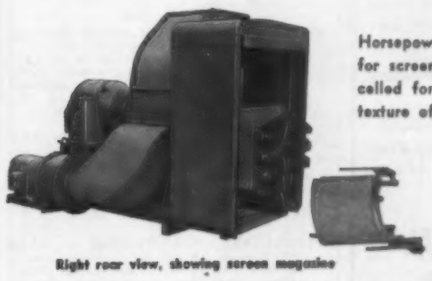
- **Suspension grinding holds stock in contact with hammers by weight of the stock itself—giving a cooler, more uniform grind.**
- **Precision engineering and built-up bolted construction for smoother operation, easy access to all areas, simpler replacement of parts.**

TEXTURE GRIND

Horsepower for horsepower, screen for screen, Jay Bee mills are unexcelled for their consistently uniform texture of grind.



Left rear view



Right rear view, showing screen magazine

Sedberry now offers complete mill installation service—every step from plan to production. Mail this coupon today for complete information!

J. B. Sedberry, Inc., Dept. F., Franklin, Tenn.
Please tell me all about: ☐ the Jay Bee Model SM Hammermill.
☐ Your complete mill installation service.

Name .....
Company .....
Street or Box .....
City ..... Zone..... State.....

J. B. SEDBERRY, INC., Tyler, Texas—Franklin, Tenn.

☆ Classified Ads ☆

Classified advertisements received by Tuesday each week will be inserted for the issue of the following Saturday.
Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. In figuring cost of your classified ad . . . each word, abbreviation, telephone exchange and number, set of initials, or group of figures counts as a word. To the number of words in your want ad itself add six (6) words for your name and address or name and address of your firm. This applies for both direct-reply ads and for blind ads containing a box number. If an ad is keyed, care of Feedstuffs, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $12.00 per column inch. No discount on ads ordered for more than one insertion.
All Want Ads cash with order.

HELP WANTED

ASSISTANT SALES MANAGER MIDWESTern feed manufacturer. Salary open. Give qualifications. Address Ad No. 4683, Feedstuffs, Minneapolis 40, Minn.

ESTABLISHED FEED MANUFACTURER wants feed nutritionist with knowledge of formulation and related fields. No age limitations. Address Ad No. 4637, Feedstuffs, Minneapolis 40, Minn.

WANTED — MAINTENANCE FOREMAN for new feed mill. Must have working knowledge of feed mill equipment to take full charge. Top salary. The DeKalb Molasses Feed Co., 220 North 7th Street, DeKalb, Ill.

MANUFACTURERS' REPS. TO SELL FAST moving line of feed fortifiers and animal health products. Nationally advertised, top quality. Liberal commissions. Address Ad No. 4742, Feedstuffs, Minneapolis 40, Minn.

MILLING EQUIPMENT SALESMAN—EXperienced, aggressive sales engineer for large, well established equipment manufacturer specializing in feeds, processing plants and industrial applications. Not interested in anyone who cannot earn $30,000 to $25,000 per year. Excellent territory — Illinois, Michigan, Wisconsin, and Ohio open. Address Ad No. 4716, Feedstuffs, Minneapolis 40, Minn.

WANTED: Creative Design Engineer

Immediate opening with leading machine manufacturing company. Experience in design and development of grain, feed and flour processing and handling equipment essential. Excellent opportunity for the right man. Send outline resume. All replies held in strict confidence. Address Ad No. 4730, Feedstuffs, Minneapolis 40, Minn.

Field Representative in Sales

Nationally-known organization has opening for a field representative in its sales division to develop markets primarily in Illinois, Michigan, and Indiana, for a new liquid feed supplement through mixer-distributors.

Position requires college degree in animal husbandry, coupled with practical experience in feeding cattle and dairy animals.

Previous sales or field experience essential.

Submit resume of background and experience to Professional Employment Manager.

U. S. INDUSTRIAL CHEMICALS CO.
Division of
National Distillers & Chemical Corp.
99 Park Avenue New York, N.Y.

HELP WANTED

EXPERIENCED FEED SALESMAN WANTed for proven area central Illinois. We have a man retiring and need a replacement. The territory is well established and company well known. Earnings are excellent. Address Ad No. 4451, Feedstuffs, Minneapolis 40, Minn.

FEED ADDITIVE SALESMEN — TERRItories open in Iowa and Nebraska with expanding AAA-1 concern. Knowledge of feed industry essential. Permanent position. Salary, expenses and incentive bonus. Address Ad No. 4731, Feedstuffs, 612 Board of Trade Bldg., Kansas City 5, Mo.

EXPERIENCED FEED SALESMAN WANTed — Old established feed manufacturer situated in the Northeast is interested in securing an experienced feed salesman to cover a portion of New England. Good opportunity for a man willing to work. Address Ad No. 4670, Feedstuffs, Minneapolis 40, Minn.

DISTRICT SALES MANAGERS-SALESMEN —Manufacturer animal health products, antibiotic vitamin mineral supplements. Territories open Indiana, Illinois, Iowa, Wisconsin, Michigan, Pennsylvania, New York, other states. Expenses, salary, commission. Give details, experience, references. Address Ad No. 4510, Feedstuffs, Minneapolis 40, Minn.

WANTED—PRODUCTION TRAINEE, COLlege graduate, capable of advancing to production management position within three years. Position will require strong leadership ability. Trainee will be given thorough training in plant operations, and supervision. Not a desk job, moderate compensation to start, with most unusual opportunity. Address Operations Manager, Ad No. 4684, Feedstuffs, Minneapolis 40, Minn.

EXPERIENCED FEED SALESMAN WANTed for established territory in Mississippi area. Well known feed company has opening for man with agricultural background, preferably with college degree in animal, dairy or poultry husbandry. Excellent compensation plan with opportunities for advancement. Car and expenses furnished. Reply by letter, giving details of age, education and experience. Reply Ad No. 4723, Feedstuffs, Minneapolis 40, Minn.

GENERAL SALES MANAGER WANTED by national manufacturer of enzymes and enzyme-based products. Sales for first quarter this year equal entire last year. Several new products now under test. Applicants must stand thorough investigation but references will not be contacted without your permission. Send complete education background, job history, photo and salary requirements in first letter. You must be capable of taking full charge of sales and marketing, but technical knowledge not required. All replies held in strict confidence. Write Ad No. 4693, Feedstuffs, Minneapolis 40, Minn.

SITUATIONS WANTED

FEED AND DISEASE SPECIALIST — Young, excellent background, unlimited ambition. Address Ad No. 4690, Feedstuffs, Minneapolis 40, Minn.

MANAGER—EXPERIENCED IN WHOLEsale and retail feeds and farm supplies. Understands all phases of mill operation and office procedure. College graduate. Address Ad No. 4717, Feedstuffs, Minneapolis 40, Minn.

MANAGER IN MEDIUM SIZED RETAIL feed manufacturing operation. Excellent background and experience in sales, buying, formulation, etc. Am presently managing small operation. Young, married. Ag college graduate. Address Ad No. 4743, Feedstuffs, Minneapolis 40, Minn.

WE NEED CAPITAL OR OPPORTUNITY that will lead to ownership of agricultural supply business. Two university graduates. Age 34, successful in sales, management of 15,000 ton feed plant. Invest in our future. Address Ad No. 4655, Feedstuffs, Minneapolis 40, Minn.

VETERINARY NUTRITIONIST — D.V.M with M.S. in animal nutrition desires to associate with medium sized feed manufacturer servicing a territory densely populated with laying flocks and/or turkeys and swine. Well qualified in animal nutrition and disease diagnosis (clinical and laboratory), feed additive drugs and F.D.A. regulations, feed ingredient analysis. Commercial experience includes public speaking on animal disease and nutrition subjects. Research in animal diseases and swine nutrition. Address Ad No. 4741, Feedstuffs, Minneapolis 40, Minn.

MACHINERY FOR SALE

FEED MIXER, 1-TON CAPACITY, GUARanteed first-class throughout, 5 H.P. motor drive. Address Ad No. 3479, Feedstuffs, Minneapolis 40, Minn.

WHIRLAWAY AIRBLAST CAR LOADERS, cast iron pulleys, new and used feed and elevator equipment. Hagan Mill Machinery, P. O. Box 574, Jefferson City, Mo.

CHAMPION MOBILE GRINDER AND mixer units. Champion Portable Mill Co., 2105 Como Ave. S.E., Minneapolis 14, Minn.

NO. 0 RAPIDS UNIT SACK CLEANER. Good condition. $125 less motor. Squealer Feed Co., Harlan, Iowa.

FOR SALE—FORTY DRAVER FEEDERS, various sizes, scales, mixers and other machinery parts. Black Rock Milling Corp., 356 Hertel Ave., Buffalo 7, N. Y.

NO. 20 STANDARD BURTON 1-TON MIXer, complete with all steel leg and 3 H.P. motor. Good condition, $200. Squealer Feed Co., Harlan, Iowa.

PNEUMATIC "AIR-CONVEYOR" SYStems. Any size, positive blowers, bio-thru feeders, also used Sutorbilts, 50% off. Nolder Co., Box 14, Corona Del Mar, Cal.

ONE 3-TON BLEND-ALL VERTICAL SINgle spiral mixer with molasses attachment, motor and starter. One year old. One No. 3UX Jay Bee Mill. Fishbaugh Construction Co., Box 6, Greenwich, Ohio.

A REAL BARGAIN! A NEARLY NEW Roskamp Challenger oat huller, complete with motors and starters, $3,600 new, subject to prior sale $2,650. James Equipment Co., Box 460, Fort Dodge, Iowa.

USED ROLLS FOR SALE — 2-PR. 9x30 full size for 2 high Allis stand. Six-pr. 9x24 and 6-pr. 9x30 Nordyke old style. All of these are good and some are full size rolls. Capital Corrugating Co., 1729 Swift Ave., North Kansas City 16, Mo.

FOR SALE—ENCLOSED MOTORS; RICHardson Scales; truck scales; hammermills; oat crimpers; horizontal and upright feed mixers; sewing machines; elevator legs; screw conveyors; molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

J. B. HAMMERMILL, MODEL 3-W, mounted on cast iron base, direct driven to 60 H.P. G.E. motor new guarantee, perfect condition. All complete with brand new 2-ton vertical mixer. Will sell for cash or finance. James Equipment Co., Box 460, Fort Dodge, Iowa.

OFFERED FOR SALE—9x30 N & M DOUble roller mills, reconditioned for corn cracking and oat crimping. Hammer mills, Prater Blue Streak completely rebuilt. Screw conveyors carried in stock 4" to 16" box and fitting. Design Mfg. & Equipment Co., 1025 N. 6th St., St. Louis 1, Mo.

SALE — ALUMINUM TANK, 4,000 GAL. Dewatering presses: Davenport No. 1A, No. 3A, Louisville 8-roll, 36". Three Louisville Rotary steam tube dryers 6'x 50', 6'x30', 8'x28'; screw conveyors, trough belt conveyor, bucket elevator, bins, etc. Perry, 1403 N. 6th Street, Philadelphia 22, Pa.

FEED MILL EQUIPMENT FOR SALE — Strong-Scott molasses mixer, complete with 10 H.P. TEFC motor, starter; S. S. molasses pump, 5 H.P. TEFC motor drive; Fords molasses blender, 15 H.P. motor; Roper molasses pump with 3 H.P. motor, starters, etc.; two 2,000 gal. molasses tanks, 5'4"x12', complete with 4" gate valves, 30' 4" pipe; five Gump Draver feeders with master drive; two Roskamp oat hullers, complete with 10 H.P. motors, starters, V-belt drive; one double stand Nordyke Marmon flaking rolls, individual 5 H.P. V-belt drive, TEFC starter, motor, etc.; Clipper No. 1297 scalper, complete, two extra screens, 1 H.P. motor, V-belt drive; Lattner gas fired horizontal boiler, automatic controls, 10 H.P., suitable steaming grain before rolling or pelleting; Prater No. 40 hammermill, direct to 50 H.P. G.E. drip-proof motor, crusher, magnet, starter, dust collector and ammeter; 1 to 5 H.P. motors, all A.C. 3-phase, 110 to 220 volt; exhaust fans; Jacobson corn cutter. All above good shape, operating daily until Jan. 1 this year. Priced right. W. A. Westbrook Grain Co., Sandwich, Ill.

Use Want Ads for Results

MACHINERY WANTED

ALL KINDS OF GOOD USED GRAIN processing machinery. E. H. Beer & Co., Inc., Baltimore 24, Md.

WILL BUY FOR CASH USED MOBILE mill or stationary "package" unit. Quote price and furnish complete details. A. T. Myren, Box 55, Springfield, Ill.

WANTED—ONE ROTARY STEAM DRYER. Please submit specifications, condition and price. Address Ad No. 4732, Feedstuffs, Minneapolis 40, Minn.

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

BUSINESS OPPORTUNITIES

FOR SALE—WELL ESTABLISHED FEED business, property, and equipment. Located in Colorado. $27,500 plus inventory. Address Ad No. 4688, Feedstuffs, Minneapolis 40, Minn.

NORTHERN ILLINOIS — RETAIL AND wholesale feed and farm supply business. Large warehouse on railroad tracks. One block from business district. Good established business of twenty years. Address Ad No. 4712, Feedstuffs, Minneapolis 40, Minn.

FOR SALE—FEED MILL; COMPLETE FAcilities for feed manufacturing. Located in southern California area. Large concentration, dairy and poultry producers. Will sell or lease, price $137,000, terms. Lease terms $1,400 per month with option to buy at end of seven years. Rental to apply on purchase price if option is exercised. Write owner: L. McPhail, 1275 Hillcrest Drive, Pomona, Cal.

LIVE IN FLORIDA—FOR SALE, ESTABlished feed, fertilizer and garden supply store in Florida's choicest location. Excellent opportunity for good feed man. Unusual potential, satisfied customers, good reputation. Purina, Agrico, other top lines. Non-profit purchase price, $20,000. Opportunity unlimited for contract hens, hogs, broilers, turkeys. Established markets. Owner expanding in real estate development. Mr. O. E. Justus, Manager, Imperial Polk Feed and Farm Supply, 820 N. Massachusetts Ave., Lakeland, Fla.

MISCELLANEOUS

FOR SALE — ALBERT ACRES FARM, home of late John A. Albert, South Central District Manager Hess and Clark, Ashland, Ohio. Luxury low cost living with broiler house and cattle pasture incomes. 80 acres, scenic Ozarks, Southwest, Missouri. Beautiful modern California redwood 30x75 ranchtype home plus two screened enclosed porches, 2-car carport, pine-paneled living room 28x30, natural stone fireplace, 3 bedrooms, cabinet kitchen, dining area, 1½ baths. Two modern, equipped broiler houses, 15,000 capacity, can be leased out. Two-car garage, large barn, one 500 ft. well, 2 H.P. Reda submersible pump, another with jet pump; 1,600 gal. reservoir; two well houses; two hog houses; small cabin. Two acre spring fed lake, fenced, piped—fishing, swimming, boating. Good fencing, cross fences. All land pasture, but woods near lake. Year round pasture, mild winters, school bus at door, 3 miles town, low taxes. Price $45,000—$25,000 down, terms to suit. Call or write Mrs. John A. Albert, Box 398, Noel, Mo.; Phone Noel 5-3302, or Southwest City 62F21.

WANT TO BUY OR SELL A MOISTURE TESTER?

If you need a good used moisture tester or have one to sell, get in touch with us. All of our used testers have been gone over very carefully by factory trained experts. Burrows is the most complete source of all grain, feed and seed testing and handling equipment and supplies. Write for free catalog. Burrows Equipment Co., 1316-C Sherman Avenue, Evanston, Illinois.

PLANT LIQUIDATIONS

Let Ross, Inc., handle sale of your milling equipment and properties large or small anywhere. Largest machinery dealer in the U. S. on feed, flour, corn and processing equipment. No auctions, will sell or purchase, immediate personal appraisal, highest prices. Complete plants, many items needed now. Over 2,000 items in stock. If it's mill machinery
Call — Write
ROSS, INC.
12 N.E. 29th St. JA 8-2132
Oklahoma City, Okla.

NUTRITION SALESMEN

Major basic producer supplying supplements to feed mills needs additional salesmen. This is your chance to join an expanding marketing operation that is going places. A few fine Midwest and Southwest territories available for ambitious men with agricultural college backgrounds and experience in the Animal Nutrition field. Liberal employment benefit program, car and expenses furnished. Salary based on experience. Send complete replies including salary requirement to Ad No. 4722, Feedstuffs, Suite 3214, 551 Fifth Ave., New York 17, N. Y. Our employees are aware of this ad.

E. H. BEER & CO., INC.
Baltimore 24, Md. Machinery Division Dickens 2-6606

SPECIALS

Prater Cracker Grader, C-5 3,000 lb. per hour	$ 250.00
Sprout-Waldron 1-ton Horizontal Mixer with 10 H.P. gearhead motor	650.00
Gruendler Hammermill, direct connected to a 40 H.P. motor	600.00
Schutte Hammermill, V-belt driven with 50 H.P., 1,800 R.P.M. TEFC motor	800.00
Munson Molasses Blender, complete with motors, pump, fittings, tanks	1,100.00
Gump Vibrox Packer, Model M-36	150.00
Link Belt Car Mover, 5 H.P. TEFC motor	495.00
9" Screw Conveyor, ft.	3.00
12" Screw Conveyor, ft.	4.00
16" Screw Conveyor, ft.	6.00

DOUGLAS SALES MEETING—Two of the highlights of the recent annual sales meeting of Douglas Chemical Co., Kansas City grain sanitation firm, were a short course in grain damaging insects, given by Prof. Donald A. Wilbur, Kansas State College entomologist, and the presentation of the "Outstanding Salesman of the Year" award to Willard D. Riggs, Penokee, Kansas. Prof. Wilbur, shown in the first picture, has presented a course in grain storage insects for the past three years. Mr. Riggs, shown at right in the second picture, is receiving a plaque from W. C. McCaslin, executive vice president of Douglas. Mr. Riggs, who is district manager for the western Kansas and eastern Colorado territory, received the award on the basis of his outstanding service to the grain trade, as well as for his increase in percentage of sales.

Figures Indicate Egg Production Is Moving South

ATHENS, GA.—Figures which help confirm the fact that commercial market egg production is moving south were recently reported by Dewey McNiece, extension poultryman, University of Georgia College of Agriculture.

These figures show that while there were declines in the number of egg-type chicks hatched in the Carolinas during January and February of 1959 compared to the same months in 1958, numbers increased considerably over the same period in Georgia, Florida, Alabama, Mississippi and Tennessee.

Georgia's increase, 73%, was the largest — from 2,462,000 egg-type chicks to 4,260,000. Other increases were: Florida, 24.4%; Alabama, 32.7%; Mississippi, 36.7%, and Tennessee, 4.1%. Reductions of 5.4% and 3.5% were reported for North and Sou'h Carolina, respectively. The nation-wide reduction for January and February from 1958 to 1959 was 0.3%.

Mr. McNiece commented that these figures indicate that "the entire area may soon be exporting eggs." He said, "To be able to export eggs we must compete with other areas on price and quality. Our profits could disappear completely unless we make our poultry operations more efficient."

Mr. McNiece suggested that one way in which efficiency can be improved is buying only the strain of birds that would be the most profitable under specific conditions. "The Random Sample Egg Laying Tests contain considerable information on most of the strains available in Georgia," he said.

According to Mr. McNiece, the test results should be used as a guide. He cautioned producers against picking a strain because it ranked first in one test for one year, and recommended choosing consistent strains that rank high over a period of two or three years in several tests.

Wirthmore Personnel At Special Meeting

WALTHAM, MASS. — Wirthmore Feeds, Inc., recently held a special meeting for key members of the firm's manufacturing department. Representatives from eight mills attended, along with engineering, production, traffic and quality control specialists.

Visiting members of the group were quartered in the nearby Lexington Inn and joined the Waltham-based men for the two-day series of conferences at Wirthmore's new headquarters building and research laboratory here. Among the many subjects on the agenda were cost and time studies, new methods, equipment changes and general plant operations.

The group included L. W. Grover, S. F. Juscen, Miss Rosemary A. Donovan, S. R. Renaudette, E. P. Berry, W. D. Harding, E. W. Rice, E. W. Peters, C. W. Landry, J. E. Watts, J. A. Mueller, A. J. Moleski, R. A. Williams, J. W. Johnson, J. B. Hall, A. S. McKillop, J. H. Walch, E. A. Reynolds, R. E. Leathers and G. E. Denault.

Grain Exchange May Alter Price Quotes

STOCKTON, CAL. — The pricing committee of the Stockton Grain Exchange met recently to suggest that the dealer price paid to growers, Stockton basis, be quoted instead of the present system, where prices reflect the dealers' mark-up, and thus would give the grain farmer a true picture of what he can sell his products for.

At the same time, the Stockton exchange reports interest by several state legislators in the possibility of introducing a proposal in California which would repeal or modify the horticultural inspection of grain as it pertains to the truck movement of grain.

Inspection is not the answer to weed control, according to an unidentified state senator, and delaying the trucks for inspection is not accomplishing the desired results.

GROUP FORMS COOPERATIVE

VISALIA, CAL. — The new Cal-Bean & Grain Cooperative, Inc., has been formed with headquarters in Visalia. A new processing plant is expected to be under construction soon.

AUTOMATIC MEDICATION
IMEDI-MATIC*
SEMI-SOLID BLOCK
Write or Call
ASSOCIATED FEED PRODUCTS, Inc.
1230 FLOUR EXCHANGE BUILDING
MINNEAPOLIS 15, MINN.
Phone: FEderal 6-4527
*Registered Naremco

NATIONAL MOLASSES COMPANY
Executive Offices: ORELAND, PA. Phone: Livingston 8-5900 (Philadelphia)

LA BUDDE
MILWAUKEE, WIS.
MALT SPROUTS
BREWERS GRAINS
DISTILLERS GRAINS
BEET PULP
AND 44 OTHER FEEDS

ANNOUNCING
ALL NEW

HEAVY DUTY SOYBEAN & CRACKING MILL IN 10x36 - 10x42 TWO & THREE PAIR HIGH & SPECIAL SIZES
ROSS HEAVY DUTY ROLLER MILL
This new Ross Model mill is the latest addition to the Ross line of Roller Mills, for over 25 years the Acme of perfection in roller mills and rolls for all purposes: grinding, crimping, crumblizing, cracking and flaking. 24 sizes in four different models available. Standard Rollerator, Heavy Duty, Heavy Duty, Jr., and 2 High Models.
The Ross Heavy Duty 2 and 3 Pair High Heavy Duty Soybean Mill or Cracking Mill is a specially designed unit for the cutting and processing of soybeans and other hard grains. Each unit is expressly designed for the heavy duty 24-hour service requirements necessary to process soybeans. Equipped with special alloy Turn-Tuff rolls of highest quality, you are assured of maximum service with the special Turner Rolls of super hard quality. Heavy Duty ½" steel seamless welded housing with oversize roller bearings and special solid corrugated feeder rolls of semi steel, all stainless steel gates, heavy plated fittings, heavy duty enclosed chain differential drives with positive roll tramming, quick throw-out levers and shear washer protection for rolls. A special soybean corrugation is usually used on these mills available in reduction multiples of 4-5 to 12-14 corrugations per inch, with differentials to suit.
All Ross units are furnished with highest grade deep chill, Turn-Tuff chilled iron rolls by Turner, World's largest roll makers. Tough hard biting corrugations for years of service.
★ No Gadgets ★ 24 Hour Service ★ Positive Trom & Roll Setting
★ Dust Free Operation ★ All Metal ★ Anti Friction Roller Bearings
★ Solid Roll Feeder ★ Stainless Steel Gate ★ V-Drive to Suit
★ Enclosed Chain Differential Drive ★ Alloy Shafts ★ Sensibly Priced
★ Write for folders and prices on Mills and Roll Chills. Free Complete Catalogue ★ Agents—Principal Cities
ROSS MACHINE & MILL SUPPLY, INC.
12 N.E. 28th St. JAckson 8-2132 OKLA. CITY, OKLA.

HIGH VALUE ROUGHAGE!
PAXCO DEHYDRATED CORN COB MEAL, with nutritional and economic values proven by research, wins new friends daily among buyers of roughages for ruminants. Write today to:
PAXTON PROCESSING CO., INC.
P. O. Box 120 Phone 222 Paxton, Illinois

Use Your Own Salt and Calcium with Herman Nagel's Formula B PHOSPHORUS CONCENTRATE WITH TRACE MINERALS
...to Supply Every Needed Mineral
in a form so soluble "it melts on your tongue."
The HERMAN NAGEL Co.
53 W. Jackson Blvd.
Chicago 4, Illinois

★ Buy and Sell Through WANT ADS ★

CORONET Granular DIKAL

Eliminates DUST

Eliminate annoying dust in handling or mixing feeds by switching to Coronet Granular DIKAL. Similarity in particle size to other feed ingredients assures improved dispersion. Granular DIKAL is convenient to handle in either bagged or bulk shipments; flows freely in all types of mixing equipment and is *all biologically usable phosphorus.*

Coronet's reputation for quality and service assures a continual supply of this premium quality phosphorus supplement. Midwest and western feed manufacturers, particularly, benefit from faster, more dependable rail or private truck delivery from Texas City, the only dicalcium production point west of the Mississippi River.

Let us figure the cost of Granular DIKAL delivered to your plant

DIKAL
CORONET DICALCIUM PHOSPHATE

DIKAL is produced by Texas City Chemicals, Inc. under the management of

Coronet Phosphate Company

NORFOLK 1, VIRGINIA

A DIVISION OF SMITH-DOUGLASS COMPANY, INCORPORATED

SD
SMITH-DOUGLASS

LETTERS

(Continued from page 7)

this opportunity to sincerely thank you for your cooperation in giving this plan such an excellent place in your publication.

We folks in the feed industry definitely feel that this plan is a "must" and that it should be strictly adhered to, in order for the industry to enjoy continued sound growth.

Would also like to take this opportunity to compliment you and your people on the excellent job that you do with Feedstuffs.

R. D. Emmons
Wirthmore Feeds Inc.

● ● ●

Benefits to All

Lawrence, Mass.

To the Editor:

We have noted with satisfaction and appreciation the boost you have given to the American Feed Manufacturers Assn. Feed Merchandising Plan in your last issue of Feedstuffs. Our company has always been a faithful adherent to the previous AFMA plan for booking feeds and is very anxious that the new revised plan should gain as near 100% adherence by industry as possible.

We believe strongly in the soundness of this plan, the benefits to all members of the industry in promoting fair practices and encouraging sanctity of contract by purchasers as well as sellers of feed. We say "thank you" for your cooperation and look forward anxiously to the result of "sign-ups" 'round the country.

Dean K. Webster, Jr.
President
H. K. Webster Co.

● ● ●

Broiler Problem

Hagerstown, Md.

To the Editor:

On the front page of the March 28 issue of Feedstuffs you have an article that in large type reads as follows: "Better Marketing Cited as Broiler Price Cure."

It seems to the writer that if a sincere study is made of the broiler industry covering the past 25 years and one seeks to find the cause for the unprofitable conditions that have prevailed for the past six or seven years, the cause of the unfavorable conditions can easily be discovered.

When the large private and cooperative feed manufacturers became aware of the possibilities for increasing their feed sales, in their greediness for volume they adopted a bad business practice, namely guaranteeing growers against a loss. When the growers became discouraged because they received nothing for their labors, then these large manufacturers not only absorbed the losses but added another bad practice, that of guaranteeing the grower a definite return for his efforts, regardless of the amount of the loss.

It should be readily apparent that these bad business practices have encouraged overproduction. Evidently, no lessons had been learned as some of the smaller manufacturers and some of the large retail distributors were forced to quit because of the heavy losses. There are others who are willing to take their places.

It is not a bad business practice to extend credit to a grower or retail distributor, provided the extension of credit is warranted and he is in a position to absorb his losses.

Integration is not the answer. The past several years have proven this true. The division that has responsibility of selling the finished birds found that they could buy the birds cheaper than they were able to grow them.

The answer to this problem should, therefore, be very simple. Namely, remove the cause for overproduction, the guaranteeing against a loss and the paying of a specified amount regardless of the amount of the loss.

Your publication can do much to help correct this situation by calling attention from time to time to the causes of the unfavorable broiler situation.

J. C. Fulde
Vice President
D. A. Stickell & Sons, Inc.

CORNELL

(Continued from page 6)

Each pig was removed from the trial when about 200 lb. The trial was ended after 135 days, and the performance of all pigs remaining was included in the data.

Average final weights were 215.6 lb. for the complete ration and 186.3 lb. for the free-choice lot.

Dr. Pond said the lot of test pigs receiving the complete mixed ration gained at the rate of 1.35 lb. per day, while the pigs receiving corn and supplement, free choice, gained an average of only 0.93 lb. per day. "Daily feed consumed by each lot was below what would be expected of pigs in dry lot," he said. "It is assumed that a substantial proportion of their total feed intake was from pasture."

Sweetener Effect

Dr. Pond reported that the study revealed an apparent preference for feed containing Sucroflavor, a commercial sweetener, when a complete mixture was supplied, but the poor palatability of the protein supplement was not improved by Sucroflavor in the lot on free-choice feed.

"This study demonstrates the importance of supplying a palatable protein supplement in a free-choice feeding program for optimum performance," he commented. "However, it is also important to note that feed required per pound gain was impressively low in the free-choice lot, indicating that pasture was utilized to a large extent."

The daily average of feed consumed by the lot fed the complete ration was 4.61 lb., while the average daily consumption for the free-choice lot was 2.73 lb. It took an average of 3.41 lb. feed to make a pound of gain in the group of pigs on the complete ration, compared to the free-choice lot which produced, on the average, a pound of gain from 2.93 lb. feed.

Of the total 4,395 lb. feed consumed by the complete-ration lot, 1,640 lb. was plain and 2,755 lb. had Sucroflavor added. The free-choice group ate 42 lb. plain supplement and 40 lb. supplement with Sucroflavor.

AFMA-AHI

(Continued from page 1)

carefully qualify their product claims to give proper and adequate recognition to the role of management; and

"That such manufacturers and mixers of medicaments and medicated feeds should emphasize to their own sales organizations, distributors, dealers and feeders, that promotion and proper use of these products should include continual emphasis on sound management and sanitation practices in feeding programs."

Latest Development

The approval of this statement is the latest development in a long-range program by the two industries. Several meetings to discuss the problem by leaders in both industries have been held in New York and Chicago. A multi-phase educational program was developed at these meetings directed toward livestock and poultry farmers, veterinarians, federal and state agencies, educators and other interested parties.

Advertising personnel of feed manufacturers and animal health and nutrition products were requested to continue emphasizing: "Medicaments, as an aid in the prevention and control of certain diseases, have an important function in livestock and poultry feeds. However, these drugs were never intended to be a substitute for sound sanitation and management on the farm." A number of the nation's largest manufacturers of animal health and nutrition products have emphasized this theme in advertising appearing in recent months, the joint announcement said.

Mr. Bruner and Mr. Glennon stated, "Grass roots thinking in the use of some of these drugs seems to have given some feed users the impression that anything less than 100% effectiveness is due either to an inadequate amount of the drug in the feed or to a possible mixing error on the part of the feed manufacturer. As a result, with increased incidence, the feed manufacturer has found himself in the position of defending some drugs on the basis of their efficacy and/or safety."

They concluded, "With the advent of medicated feed, producers of animal health and nutrition products have played an integral part in the development of an animal agriculture in the United States which is second to none in the world. We are very pleased the animal health and nutrition product producers are cooperating in this relations program with the nation's feeders to re-emphasize the proper role their products play in the over-all production picture."

A bulletin from AFMA headquarters in Chicago, referring to the AFMA-AHI medicated feed campaign, said:

"We now ask feed manufacturers to re-align their advertising and sales promotion program to be consistent with current inter-industry philosophy. Our industry has a major responsibility and an obligation to those whom we serve. We can best serve the farmer and feeder by:

"1. Restoring where needed, in advertising, sales and education, a more realistic concept of medicated feed use.

"2. Apprising advertising departments and advertising agencies of the inter-industry policy statement.

"3. Focusing attention of sales department on the importance of management and sanitation in all feeding programs merchandised.

"4. Including in educational campaigns emphasis on the role of management and sanitation as opposed to emphasis on the possible 'miracles' that might be expected from the various additives that the feed might contain."

POULTS

(Continued from page 1)

March totaled 1,727,000, compared with 1,131,000 a year earlier. For the first three months of 1959, the number of light breed poults hatched was 4,560,000, as against 2,972,000 the previous year. Both the increase for the month and the increase for the quarter totaled 53%.

A report on turkey eggs in incubators April 1 indicates further increases for April. Heavy white breed eggs total 4,475,000, compared with 3,564,000 the previous April 1. Other heavy breeds, however, show an egg total of 19,216,000, compared with 21,560,000 the previous April. Light breed eggs in incubators totaled 2,832,000, as against 2,305,000 the previous April 1.

Chase Bag Acquires California Company

NEW YORK—Chase Bag Co., New York, has announced the acquisition of Nafco Bags, Oakland, Cal., from National Automotive Fibres, Inc.

The present sales organization of the acquired company will continue as the Nafco Bags sales division of Chase Bag Co. under John W. Paulsen, former manager of Nafco. Headquarters of the Nafco sales division will be at 503 Market St., San Francisco.

FLAX

(Continued from page 1)

there were to be bids offering CCC (1) linseed oil and (2) linseed meal. The change, officials said, will simplify administrative operations. CCC's buying price for oil will be each processor's successful bid on price.

As previously reported, USDA officials have had little interest in the toll crush contract, but at that time it appeared they were "over a barrel" since the storage outlook at Minneapolis was snug to tight. The flaxseed crushing program is one escape from this tight storage condition.

USDA officials said they are unable at this time to forecast the availability of flaxseed for bidding at the Minneapolis CSS commodity office, which will handle the program. However, CSS officials said that they had already issued loading out orders for other grains in the Minneapolis-Duluth area for transfer to Chicago and Dallas offices to make way for receipts of northwest flaxseed.

In this announcement USDA makes no precise timing on offers for its flaxseed stocks except that contained in its selling price announcement. The price of $3.09 bu. will be in line with CCC's announced selling price through July 31.

Details of the program will be announced by the Minneapolis CSS office.

In Minneapolis, trade sources reported that some CCC flaxseed was arriving. CSS officials said they were not yet ready to accept bids but indicated that a further announcement might be made "within a week or so."

Capacity of Arkansas Poultry Auction Noted

SPRINGDALE, ARK. — The new poultry auction planned at Springdale (Feedstuffs, April 4, page 8) will be equipped to handle 1,250,000 broilers a week.

Incorporators of the auction—Arkansas Poultry Exchange, Inc.—are: Don Tyson, Springdale; Tom Hagen, Rogers, Ark., and E. D. Wilmoth, Decatur, Ark. All of the incorporators produce several hundred thousand broilers annually.

Mr. Tyson said about 4 million chickens are marketed each week in Arkansas, but that none of them go through auctions. Wes Field, Berryville, Ark., president of the Arkansas Poultry Processors Assn., said the new market will be of great benefit to growers in stabilizing prices.

PASTURES EMERGE IN GOOD CONDITION

WASHINGTON — Pastures went into the past winter in good condition in most areas of the nation and are coming out of it the same way, the U.S. Department of Agriculture reports. As of April 1, USDA said, condition nationally is 80% of normal—down 3 percentage points from last year, but otherwise the best for the date since 1953.

Not all areas are sharing in the bounty, however. Precipitation has been considerably less than normal during the past four months in the extreme northern portion of the Mississippi Valley, the northern and southern Great Plains and the Southwest. Improvement was noted in the south Atlantic area over last year, but conditions were not as good as average for the date. The south central region reported poorer conditions. Conditions were called excellent in the Pacific Northwest, most of the north central and northeast parts of the nation.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

New York: Demand fair; trend steady; supply limited; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 13⅛@15⅛¢, 1,500 A 15⅛@17¢, 2,250 A 17⅛@20¢, 3,000 A 19@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19¼¢; f.o.b. Massachusetts, New York or Pennsylvania.

Boston: Demand fair; supply adequate; 600 D, 1,500 A 17½¢ lb.; 300 D, 2,250 A 18¢; 300 D, 1,500 A 16⅛¢; 300 D, 750 A 14⅝¢; 400 D, 3,000 A 20¢; 300 D, 3,000 A 19½¢; 75 D, 750 A 14⅛¢.

Denver: Demand fair; trend steady; supply ample; 300 D, 2,250 A 22¢ lb.

Minneapolis: 10,000 A 35¢ lb.; 300 D, 2,250 A 21½¢ lb.; 300 D, 1,500 A 20¼¢ lb.; 300 D, 75 A 13½¢ lb.

Chicago: Demand fair; trend steady; supply adequate; straight A feeding oil, with 10,000 units vitamin A per gram 7@7⅛¢ a million units of vitamin A; l.c.l. packed in 55-gal. drums, drums included, f.o.b. Chicago.

ALFALFA MEAL

Boston: Demand light; supply ample; dehydrated, 17% $80; suncured, 13% $50, nominal.

Philadelphia: Demand and supply fair; 17% dehydrated $81.50.

Omaha: Demand good; trend strong; supply tight; 17% dehydrated, 100,000 A units, bulk pellets $60; sacked meal $65.

Los Angeles: Demand fair; trend steady; supply adequate; dehydrated meal, 17% protein, 100,000 A $51, bulk; dehydrated pellet meal, 17% protein, 100,000 A $53, bulk; suncured meal, 15% protein $42@43, bulk; suncured crumbles, 15% protein $44@45, bulk.

Denver: Demand fair; trend steady; supply ample; dehydrated $56.

Portland: Demand slow; trend lower; supply ample; suncured, 15% $41.50; dehydrated $66.50.

Ft. Worth: Demand good on dehydrated, poor on suncured; supply sufficient, except limited offerings on No. 1 suncured; dehydrated, 20% protein, 150,000 A $66 truck; 17% protein, 100,000 A $63 truck, rail $66; No. 1 quality suncured 13% No. 1 ¼-in. grind $39@40, nominal, truck or rail; No. 2 quality $35@36.

Memphis: Demand fair; trend lower; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $65.

New Orleans: Demand good; trend steady; supply light; vitamin A, 17% $77@79; pellets $75@77.

Minneapolis: Fair demand for tight supplies; price for 17% meal with 100,000 units vitamin A guaranteed holds at $70 for reground pellets and $72 for oiled reground, bulk $3 less; not much expected from the new crop until mid-May.

Cincinnati: Demand poor; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $58.50.

Chicago: Demand slow; trend steady; supply tight; 17% dehydrated with 100,000 units vitamin A guaranteed $72; 15% No. 1 fine ground suncured $65.50.

St. Louis: Demand slow; trend steady; supply ample; suncured, 13% fine $39; dehydrated alfalfa, 17%, 100,000 A $70.

Buffalo: Demand fair; trend steady; supply fair; $61, Boston.

Seattle: Demand fair; trend steady; supply good; 15% protein suncured $44, truck loads; 136,000 A unit dehydrated $69, truck loads.

Kansas City: Demand active with interest in new crop picking up; trend steady; supply fairly tight even though there is a little production in the Mississippi Valley, in Texas and in Oklahoma; dehydrated alfalfa meal with 17% protein and 100,000 units vitamin A guaranteed on arrival, reground pellets $65, sacked; greased meal $67, sacked; pellets $60, bulk; 18% protein, 125,000 units A meal $69, sacked; non-guaranteed A meal, 17% protein $59@60, sacked; 15% protein $50, sacked; suncured demand is good for 13% protein pellets which are tight, otherwise fairly slow, No. 1 fine ground $35, No. 1 ¼-in. $32.50@33, No. 2 ¼-in. $29, sacked.

ANIMAL FATS (STABILIZED)

St. Paul: Fairly good feed demand, lack of export interest dropped price ¼¢ lb. to 6¾¢ for bleachable fancy tallow, f.o.b. producer's plant.

Ft. Worth: Demand good; supply rather tight; prime tallow, tank cars 7@7⅛¢ lb.; drums 8⅛@8⅜¢ lb., f.o.b. north Texas packing plants with returnable drums.

Boston: Demand fair; supply good; tallow 7⅜¢ lb.; yellow grease 7¢ lb.

New Orleans: Demand fair; trend steady; supply adequate; 7@7⅛¢ lb., tank cars.

San Francisco: Demand fair; supply ample; bleachable fancy 7⅛¢ lb.; yellow grease 7¼¢ lb.

Louisville: Demand fair; supply good; trend unchanged; bleachable fancy 7⅛¢ lb.; white tallow 7⅜¢ lb.; yellow grease 6⅜¢ lb.

Chicago: Demand very quiet; trend steady; supply ample; bleachable fancy tallow, tank, truck or carlots 7¢ lb.

Atlanta: Demand good; trend steady; supply scarce; 7⅛¢ lb., bulk, delivered.

Kansas City: Demand fair; trend steady; supply adequate; prime tallow 7¢ lb., tank car.

BARLEY FEED

Boston: Demand slow; supply adequate; $47.

Philadelphia: Demand slow; supply fair; pulverized $50.50.

Los Angeles: Demand slow; trend firm; supply scarce; standard rolled $3.30 cwt.; standard ground $3.30 cwt.

Ogden: Supply normal; rolled $50@55; whole barley $42@47.

Portland: Demand good; supply ample; trend unchanged; rolled $63; ground $61.

Chicago: Demand good; trend steady; supply adequate; $38.

New Orleans: Demand slow; trend unchanged; supply fair; $64@65.

San Francisco: Demand fair; supply ample; rolled $65.60, ground $64.50.

Baltimore: Demand fair; supply ample; trend unchanged; $48.50.

Milwaukee: Demand good; supply fair; needles 93¢@$1.08 cwt.; ground screenings $25, sacked, Milwaukee.

Seattle: Demand fair; trend steady; supply good; $50.50, bulk, truck lots.

BENTONITE (SODIUM)

Denver: Demand fair; trend good; supply ample; $25.

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton carlots: 80 granular $31.50; 200 mesh fine $31.

Chicago: Demand steady; trend firm; supply adequate; f.o.b. Wyoming and South Dakota shipping points: granular, 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50, f.o.b. Belle Fourche, S.D., minimum 30-ton carlots, 80 granular $13.50 net; 200 mesh, fine $13.25 net.

BLOOD FLOUR

Louisville: Demand fair; trend steady; supply good; $120@125.

BLOOD MEAL

Portland: Demand slow; supply ample; trend unchanged; $130.

Ogden: Supply normal; $115 in 100-lb. bags, f.o.b. Ogden.

Los Angeles: Demand fair; trend steady; supply limited; $7.50 a unit of ammonia.

Chicago: Demand fair; trend steady; supply light; $142.50, guaranteed 80% protein, in 100-lb. bags.

New Orleans: Demand slow; trend unchanged; supply ample; $120@125.

San Francisco: Demand good; supply tight; $8, a unit of ammonia.

Louisville: Demand fair; trend steady; supply normal; $120@125.

BONE MEAL (STEAMED)

Boston: Demand and supply steady; $90.

Denver: Demand good; trend strong; supply nil (on strike); $80, nominal, Bay Shore, Cal.

Los Angeles: Demand fair; trend steady; supply scarce; imported $76 in 20-ton lots.

Portland: Demand slow; supply ample; trend unchanged; $100.

Ft. Worth: Demand good; supply light; $90, f.o.b. Ft. Worth, local manufacture.

Cincinnati: Demand fair; trend steady; supply very scarce; $115.

New Orleans: Demand slow; supply light; trend steady; $100@110.

Chicago: Demand good; trend steady; supply light; $107.50 in 50-lb. bags.

San Francisco: Demand good; supply ample; $75.

Louisville: Demand fair; trend steady; supply light; $105@115.

Buffalo: Demand good; trend stronger; supply limited; $100.

Seattle: Demand good; trend firm; supply limited; $87, ex-dock, truck lots.

BREWERS DRIED GRAINS

Ft. Worth: Demand fair; supply moderate; 26% protein $56.

Philadelphia: Demand and supply fair; trend unsettled; $59.50.

Boston: Demand fair; supply good; 22% $53.50; 26% $58.

Los Angeles: Demand fair; trend unchanged; supply limited; $49.50 bulk, $53.50 sacked.

Chicago: Demand fair; trend steady; supply good; 26% $51@51.50.

Cincinnati: Demand poor; trend steady; supply adequate; $61.

St. Louis: Demand good; trend steady; supply adequate; $49.

San Francisco: Demand fair; supply ample; $54.

Milwaukee: Demand good; supply fair; $53.

New Orleans: Demand fair; trend steady; supply ample; $53@54.50.

Louisville: Demand fair; trend easy; supply good; $51, down $1.

Buffalo: Demand and supply fair; trend steady; $54, bulk, Boston.

BREWERS DRIED YEAST

Omaha: 10½¢ lb.

Boston: Demand and supply steady; 11¢ lb.

Denver: Demand light; trend steady; supply ample; 9¢ lb., f.o.b. Golden, Colo.

Los Angeles: Demand fair; trend unchanged; supply limited; 10¢ lb. in 5-ton lots; 11¢ lb. in 1-ton lots; 12¢ lb. in less than 1-ton lots.

Portland: Demand good; supply ample; trend unchanged; 8½¢ lb.

Chicago: Demand good; trend steady; supply limited; 9⅛@10⅛¢ lb. in carlots; 9⅝@12¾¢ lb., l.c.l.

San Francisco: Demand fair; supply good; 10¢ lb.

Louisville: Demand slow; trend steady; supply good; 10@10⅝¢ lb.

St. Louis: Demand good; trend easier; supply limited; 9⅛¢ lb. in carlots; 10⅛¢ lb. in ton lots; 11⅛¢ lb. in less than ton lots.

Milwaukee: Demand good; trend steady; supply limited; 10@11¢ lb. in carlots; 10⅛@12¼¢ lb., l.c.l.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11⅛¢ lb.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11⅛¢ lb.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11⅛¢ lb.

New York: Carlots 9⅛¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10⅝¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

Buffalo: Demand good; trend steady; supply limited; $16.75 cwt.

Seattle: Demand slow; trend steady; supply ample; $12 cwt.

BUTTERMILK-CONDENSED

Ogden: Supply normal; $4.40, 100-lb. drum.

Los Angeles: Demand fair; trend unchanged; supply adequate; 5½¢ lb. in 100-lb. lots; 4⅛¢ lb. in 500-lb. lots.

Boston: Demand slow; supply tight; 3½¢ lb., nominal.

Philadelphia: Demand slow; supply light; $4.25 cwt.

Wichita: Demand good; supply insufficient; $2.90 cwt. in barrels.

Chicago: Demand fair; trend steady; supply good; $3.25@3.50 in carlots.

New Orleans: Demand slow; supply normal; trend steady; $4.25@4.30 cwt.

San Francisco: Demand fair; supply good; $5 cwt.

Louisville: Demand dull; trend steady; supply nil; nominal $4.25 cwt.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight)

New York: Crystals $15.28, flour $10.28.
Buffalo: Crystals $16.11, flour $11.11.
Toledo: Crystals $17.96, flour $12.96.
Boston: Crystals $16.53, flour $11.63.
Limecrest, N.J.: Crystals $10.50, flour $5.50.

CALCIUM CARBONATE

Los Angeles: Demand fair; trend steady; supply ample; $10.25.

Cincinnati: Demand fair; trend steady; supply adequate; $8@9 cwt.

Chicago: Demand steady; trend firm; supply adequate; fine grind, plain, 100-lb. bags $9.54; bulk, in hopper cars $7.54; bulk in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50-lb. bag $12.25, 100-lb. bag $11.50; bulk, boxcar $10; bulk hopper $9.50; coarse grind $1 premium, delivered Minneapolis.

Seattle: Demand and trend steady; supply good; $14, ex-warehouse, truck lots.

CHARCOAL

Boston: Demand and supply steady; $100.

Los Angeles: Demand fair; trend unchanged; supply limited; hardwood poultry $156 in less than ton lots; $144.40 in ton lots.

Chicago: Demand quiet; trend steady; supply ample; poultry charcoal $110, in 50-lb. multiwalls.

San Francisco: Demand steady; supply ample; $141.

COCONUT OIL MEAL

Los Angeles: Demand slow; trend unchanged; supply adequate; copra cake $77, bulk.

Portland: Demand slow; trend lower; supply ample; $68, domestic.

San Francisco: Demand good; supply tight; expeller $80, solvent $63.

Seattle: Demand fair; trend easy; supply ample; $76, via truck (California).

COD LIVER OIL (FORTIFIED)

New York: Demand limited; trend steady; supply fair; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14⅛@15⅛¢, 1,500 A 13⅛@20¢, 2,250 A 18⅛@21¢, 3,000 A 21⅛@23¢; 600 ICU, 1,500 A 17⅛@19¼¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

Boston: Demand fair; supply adequate; 600 D, 2,250 A 19¢ lb.; 300 D, 3,000 A 20¼¢; 300 D, 2,250 A 18⅝¢; 600 D, 1,500 A 18¢; 300 D, 1,500 A 17¢.

CONDENSED FISH SOLUBLES

Boston: Demand active; supply scarce; 5¢ lb., nominal.

Denver: Demand fair; trend steady; supply ample; dried $182.40, f.o.b. Denver.

Los Angeles: Demand fair; trend unchanged; supply limited; 8¢ lb.

New York: Demand fair; trend downward; supply tight; 5¢ lb., f.o.b. eastern shore.

New Orleans: Demand light; supply limited; trend steady; 50% solid $106@109.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $53.80, meal $81.80.
Atlanta: Feed $59.98, meal $87.98.
Birmingham: Feed $58.64, meal $86.64.
Boston: Feed $53.84, meal $86.84.
Chicago: Feed $47, meal $75.
Cleveland: Feed $55.14, meal $83.14.
Denver: Feed $57.51, meal $85.51.
Ft. Worth: Feed $55.96, meal $83.96.
Indianapolis: Feed $52.36, meal $80.36.
Kansas City: Feed $47, meal $75.
Louisville: Feed $54.21, meal $82.21.
New Orleans: Feed $57.20, meal $85.20.
New York: Feed $53.43, meal $86.43.
Norfolk: Feed $57.71, meal $85.71.
Philadelphia: Feed $58.02, meal $86.02.
Pittsburgh: Feed $55.96, meal $83.96.
St. Louis: Feed $47, meal $75.

CORN OIL MEAL

Cincinnati: Demand fair; trend steady; supply adequate; $55.

Louisville: Demand slow; trend steady; supply light; $58.45.

COTTONSEED OIL MEAL

Ogden: Supply average; 41% $77@82.

Portland: Demand improved; trend higher; supply ample; $76.

Ft. Worth: Demand fair; supply sufficient; 41% old process $71, prompt; pellets $3 additional; cottonseed hulls $19.

Boston: Demand improved; supply steady; $82.50.

Philadelphia: Demand slow; supply fair; $80.

Omaha: Demand slow; trend steady; supply adequate; 41% solvent $67.10, bulk.

Wichita: Demand fair; supply sufficient; 41% old process $72.

Denver: Demand fair; trend steady; supply ample; $70.60.

Los Angeles: Demand fair; trend unchanged; supply adequate; $71@72, bulk.

New Orleans: Demand fair; trend steady; supply adequate; $76.50@77.

Chicago: Demand slow; trend steady; supply good; hydraulic $64.50; solvent $64, Memphis basis.

Memphis: Demand poor; trend lower; supply adequate; prime 41% protein, old process $63.50; new process, 41% solvent $63.50.

Cincinnati: Demand fair; trend steady; supply adequate; $72.50.

St. Louis: Demand fair; trend firm; supply ample; solvent $68.50.

San Francisco: Demand good; supply tight; 41% $77.70, 44% $72.

Louisville: Demand dull; trend easy; supply fair; old process $70.50; new process $69.50.

Seattle: Demand fair; trend strong; supply limited; $88, truck lots, 41% expeller process.

Buffalo: Demand poor; trend steady to lower; supply adequate; $82, Boston.

Kansas City: Demand slow; trend steady; supply adequate for slow demand but generally a rather thin market; solvent $61, sacked, Lubbock, Texas, which will come into Kansas City at a lower price than $64.50, sacked, Memphis; old process $64.50@65.50, sacked, Memphis.

Atlanta: Demand fair; trend steady; supply ample; 41% $69.

CURACAO PHOSPHATE

New York: Trend steady; ground Curacao phosphate in 100-lb. bags $48, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

D ACTIVATED ANIMAL STEROL (POWDERED)

New York: Demand and supply good; trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums, f.o.b. or delivered basis Pennsylvania, Delaware or New York.

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 18¢ lb., warehouse.

Kansas City: Demand fair; trend steady; supply adequate; 1,500 ICU 9⅝@10¢ lb.; 3,000 ICU 11⅛@12¢ lb., in ton lots or larger.

D ACTIVATED PLANT STEROL (POWDERED)

Chicago: Demand fair to good; trend steady; supply adequate; 4,000,000 U.S.P. units per lb. 15¢ lb. in ton lots; less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb.; ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12%, $51 net ton, f.o.b. Tupelo in 100-lb. multiwall bags, $48 in bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum calcium 36%, maximum fluorine .18% $69.12 net ton, f.o.b. Wales in 100-lb. multiwall bags, $3 less in bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $71.50, net ton, f.o.b. Houston, 100-lb. multiwall paper bags; $68.50 in bulk.

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; carlots $63.50, truck load $64.25, net ton, f.o.b. Coronet in 100-lb. multiwall bags $60.50 and $61.25 in bulk.

Cincinnati: 18% phosphorus $81, sacked; 13% phosphorus $64.98, f.o.b. Cincinnati.

DICALCIUM PHOSPHATE

Chicago: Stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn.; less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more $94.50, basis Chicago Heights and Nashville; less than 20,000 lb. $104.50; bulk boxcars or hoppers $3 net ton less than bagged material.

Bonnie, Fla.: Minimum phosphorus 18½%, granular $83.25; freight equalized with closest producing point, carload basis.

Texas City, Texas: 18.5% minimum phosphorus, 21% minimum calcium, 24% maximum, granular $77.70 net ton, f.o.b. Texas City in 100-lb. multiwall bags; bulk, boxcars and hoppers, $3 net ton less than bagged material.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $83.25, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $94.10, delivered; $3 less in bulk.

Trenton, Mich.: Minimum phosphorus 18½%, maximum fluorine .03% guaranteed $83.25, f.o.b. Trenton in 100-lb. multiwalls; minimum phosphorus 21%, maximum fluor-

ine .03% guaranteed $94.50, f.o.b. Trenton in 100-lb. multiwall bags.

Cincinnati: 18½% phosphorus $92@93.

Portland: Demand slow; supply ample; trend unchanged; $115.

Denver: Demand fair; trend steady; supply ample; $93.60.

DISTILLERS DRIED GRAINS

New York: Demand good; trend upward; supply fair; light $60, bulk, Boston; dark $62, bulk, Boston, plus $5 sacked; solubles $83, sacked, Boston.

Boston: Demand good; supply light; dark $69, light $68.

Philadelphia: Demand slow; trend unsettled; supply light; lights $68; darks $69.

Cincinnati: Demand poor; trend lower; supply adequate; by truck $57.

Louisville: Demand good; trend steady; supply fair; bourbon grains: light $58, dark $59, solubles $77.

San Francisco: Demand fair; supply ample; solubles $85.

Buffalo: Demand fair; trend steady; supply adequate; $63, bulk, Boston.

Seattle: Demand fair; trend steady; supply limited; $67, truck lots.

DRIED BEET PULP

Boston: Demand good; supply fair; domestic $59.50; Canadian $61.

Denver: Demand good; trend steady; supply ample; $49.23.

Los Angeles: Demand good; trend unchanged; supply ample; molasses $47.30, bulk, new crop.

Ogden: Supply average; $44@48.

Portland: Demand good; supply limited; trend unchanged; $54.

Ft. Worth: Demand slow; offerings light; carlots, 50-lb. papers, April $61.

San Francisco: Demand good; supply fair; $55.50.

New Orleans: Demand fair; trend steady; supply adequate; $60@61.

Milwaukee: Demand good; supply fair; plain $54, molasses $54.

Seattle: Demand good; trend firm; supply limited; $49, carlots.

Buffalo: Demand and supply fair; trend steady; $60, Boston.

Atlanta: Demand fair; trend steady; supply ample; $67.75.

DRIED BUTTERMILK

Ogden: Supply average; $8.50, 100-lb. bag.

Los Angeles: Demand fair; trend steady; supply adequate; 11¾¢ lb.

New Orleans: Demand slow; trend unchanged; supply adequate; $11.50@12 cwt.

Chicago: Demand good; trend steady; supply light; medium acid 10¾@11¢ lb.; sweet cream 11@11¼¢ lb.

San Francisco: Demand fair; supply ample; 11½¢ lb.

Milwaukee: Demand and supply fair; $10 cwt.

Louisville: Demand slow; trend steady; supply normal; 12@12½¢ lb.

Buffalo: Demand good; trend firmer; supply limited; $11.95 cwt.

DRIED CITRUS PULP

Boston: Demand slow; supply ample; $35, f.o.b. Florida.

Los Angeles: Demand fair; trend unchanged to slightly weaker; supply ample; orange pulp $41, bulk; lemon pulp $40, bulk.

New Orleans: Demand fair; trend steady; supply ample; $35@40, f.o.b. Florida.

San Francisco: Demand and supply fair; meal $54.

Atlanta: Demand good; trend steady; supply ample; $35@40, f.o.b. Florida producing mills; meal $30@35, f.o.b. Florida producing mills.

Buffalo: Demand poor; trend steady; supply ample; $37.50, f.o.b. Florida points.

DRIED SKIM MILK

Boston: Demand good; supply scarce; 12¢ lb., nominal.

Philadelphia: Demand slow; supply light; $12.50 cwt.

Los Angeles: Demand fair; trend unchanged; supply adequate; 14¢ lb. in less than ton lots; 13¾¢ lb. in ton lots.

Ogden: Supply average; $15.15, 100-lb. drum.

Portland: Demand slow; supply ample; trend unchanged; $13 cwt.

Minneapolis: Good demand; supplies limited; price holds firm at 11¢ lb.

Cincinnati: Demand fair; trend steady; supply adequate; 10¾¢ lb.

New Orleans: Demand fair; trend firm; supply ample; $12@12.50 cwt.

Chicago: Demand fair; trend steady; supply ample; $10.60@10.85 cwt. in carlots.

San Francisco: Demand and supply fair; 13¼¢ lb.

Louisville: Demand slow; trend steady; supply ample; 12¢ lb.

Milwaukee: Demand and supply fair; $11 cwt.

Buffalo: Demand fair; trend steady; supple ample; $10.65 cwt.

DRIED WHEY

Ogden: Supply average; $6.90, 100-lb. bag.

Portland: Demand slow; supply ample; trend unchanged; $7 cwt.

Ft. Worth: Demand fair; supply adequate; carlots, standard $6, sacked, delivered Ft. Worth; $6.25 ton lots, f.o.b. warehouse, Ft. Worth.

Boston: Demand steady; supply short; 5½¢ lb., nominal.

Philadelphia: Demand slow; supply light; $6.50 cwt.

Denver: Demand fair; trend steady; supply ample; $6.05 cwt.

Los Angeles: Demand fair; trend steady; supply ample; $6.10 cwt. in carloads; $6.40 cwt. in l.c.l.

Minneapolis: Good demand; fair supply; steady trend; $5.50 cwt., producers' plants.

New Orleans: Demand fair; trend steady; supply adequate; $5.50@6 cwt.

Cincinnati: Demand fair; trend steady; supply adequate; $6.15 cwt.

Chicago: Demand fair; trend steady; supply adequate; $5.50, f.o.b. plant.

San Francisco: Demand steady; supply good; $5.75 cwt.

Louisville: Demand fair; trend steady; supply ample; 4½¢ lb.

Seattle: Demand and trend steady; supply good; $6.40 cwt., ex-warehouse, l.c.l.

Kansas City: Demand good; supply light; trend steady; $5.50 cwt., producers' plants for regular and partially delactosed.

FEATHER MEAL (HYDROLYZED)

Boston: Demand and supply nil; withdrawn.

Los Angeles: Demand good; trend firm; supply limited; $1.25 a unit of protein.

Ft. Worth: Demand excellent; supply very limited; 85% to 87% protein $108.50, f.o.b. trucks, north Texas plants.

Salisbury, Md.: Good demand; limited supply; $100, bulk, f.o.b. producers' plants.

Atlanta: Demand good; trend steady; supply barely ample; $105.50, f.o.b. Georgia and Alabama producing mills.

FISH MEAL

Ogden: Supply average; $2.20 a unit, f.o.b. Coast; 65% $172@174.

Portland: Demand good; supply ample; trend unchanged; $2.25 a unit protein.

Ft. Worth: Demand good; limited offerings for nearby pickup; 65% Peruvian $154.50, immediate, f.o.b. Houston.

Boston: Demand active; supply irregular; $157@160.

Denver: Demand good; trend steady; supply very tight; $2.45 a unit of protein, f.o.b. West Coast.

Los Angeles: Demand good; trend steady; supply limited; local production, 60% protein $2.45@2.50 a unit, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $164.

Minneapolis: Fairly good demand; supply limited; trend steady; 60% blended fish meal $180, delivered; 70% Canadian herring $2.22 a unit, f.o.b. West Coast.

Chicago: Demand quiet; trend steady; old crop about exhausted; eastern menhaden fish meal, new crop offered from $135@137, East or Gulf Coasts; western blended $150, river points; Canadian herring meal, 74% protein $2.22@2.25 a unit of protein, subject to production; menhaden scrap, sacked, burlap bags, new crop $131 @133.

San Francisco: Demand good; supply tight; $2.35 a unit of protein.

Milwaukee: Demand good; supply fair; 60% $159.50, Milwaukee.

New Orleans: Demand and supply light; trend steady; menhaden, 60% $162@164; scrap $156@159, f.o.b. Gulf.

Louisville: Demand slow; trend steady; supply normal; nominal $170.

Seattle: Demand fair; trend steady; supply good; $2.33 a unit protein, truck lots (Canadian production).

Atlanta: Demand good; trend steady; supply nil; 60% menhaden $135, sacked, f.o.b. Gulf ports, May-June, subject to production.

Buffalo: Demand good; trend steady; supply ample; 60% protein menhaden $175 bulk, $180 sacked.

HAY

Boston: Demand and supply steady; No. 2 timothy $40@42.

Philadelphia: Demand slow; supply light; $28@30.

Wichita: Demand poor; supply ample; prairie $15; alfalfa $16@18.

Denver: Demand average; trend fair; supply ample; alfalfa, baled $24@25, first and second cutting.

Portland: Demand slow; supply ample; trend unchanged; $34.

Ogden: Supply normal; $1@1.25 bale; $18 ton in the barn.

Los Angeles: New crop, Imperial Valley, U.S. No. 1 $35@37, good quality, good demand; new crop, Imperial Valley, U.S. No. 2 leafy $33@34, good quality, good demand; U.S. No. 2 green $28@30, fair demand; ample supplies; U.S. No. 2 $24@28, fair demand, ample supplies.

Ft. Worth: Demand fair for alfalfa; practically nil for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $38@40, No. 2 $36@38; prairie No. 2 $26@28; No. 2 Johnson grass $24@26, delivered Texas common points.

Cincinnati: Demand poor; trend steady; supply adequate; by truck: No. 1 timothy $24; No. 1 second cutting green alfalfa $31; mixed $27; wheat or oat straw $19.

Louisville: Demand very good; trend weak; supply good; local hay, No. 1 $25, No. 2 $23; straw $19@20, any grade.

Seattle: Demand and supply fair; trend firm; alfalfa, U.S. No. 2 green $34, truck lots.

HOMINY FEED

Boston: Demand and supply steady; domestic $59.50; Canadian $58.50.

Memphis: Demand good; trend steady to higher; supply ample; white $47, yellow $49.

Cincinnati: Demand fair; trend higher; supply adequate; $51.50.

New Orleans: Demand fair; trend steady; supply fair; $51.50@52.

Chicago: Demand good; trend higher; supply tight; $49@49.50.

St. Louis: Demand slow; trend steady; supply limited; yellow $51.

Milwaukee: Demand good; supply fair; $48, May shipment.

Louisville: Demand slow; trend easy; supply ample; $51.40.

Seattle: Demand and supply good; trend steady; $54, carlots.

Buffalo: Demand good; trend steady; supply fair; $55, bulk, Boston.

Kansas City: Demand good; trend steady to stronger; supply very tight; yellow $42 @42.50 bulk, $3.50 more for sacks.

LINSEED OIL MEAL

Boston: Demand slow; supply spotty; $92.

Philadelphia: Demand and supply fair; 34% $94.50, nominal.

Omaha: Demand good; trend strong; supply tight; 34% solvent $77.80, bulk; 32% old process $85.80, Omaha basis.

Wichita: Demand slow; supply ample; 34% $86.

Denver: Demand fair; trend steady; supply tight for April; $88.50.

Los Angeles: Demand slow; trend unchanged; supply adequate; local production, 29% protein $72, bulk.

Portland: Demand slow; supply ample; trend unchanged; $87.

Ft. Worth: Demand poor; supply adequate; solvent $100 rail, $90@95 truck.

Minneapolis: April meal extremely tight following reduced production by processors waiting for toll crushing; meal available through resellers in late April at $75@75.50; first half May $70, seller's option; last half May $65, seller's option; no contracts for toll crushing reported as yet.

Chicago: Demand fair; trend steady; supply short; solvent $77; no quotes on expeller.

San Francisco: Demand fair; supply ample; new crop $75.

Cincinnati: Demand poor; trend steady; supply fair; new process $85; old process $82.

Milwaukee: Demand good; supply fair; old process $88.50, nominal, April; new process $83.50, nominal, April; old process $76, May; new process $71, May.

New Orleans: Demand slow; supply ample; trend steady; $82@86.

Louisville: Demand slow; trend strong; supply light; old process $99, unchanged; new process $90, up $2.50.

Seattle: Demand fair; trend firm; supply limited; 34% protein $90, car loads.

Kansas City: Demand fair; trend steady to weaker for forward; supply very tight for spot with old process not even available because of slack production; solvent $74, bulk, Minneapolis; old process $70 for May.

MALT SPROUTS

Boston: Demand and supply limited; $42.50.

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $42.

Milwaukee: Demand good; supply fair; odd weights $36; even weights $38.

New Orleans: Demand fair; trend steady; supply adequate; $42@44.

Chicago: Demand slow; trend steady; supply fair; No. 1 $43.40, No. 2 $38.50.

MEAT AND BONE MEAL

Los Angeles: Demand good; trend steady; supply limited; 50% protein $2.10 a unit, bulk.

Denver: Demand fair; trend firm; supply normal; 50% $102.50, bagged, truck lots; $105, bagged, small lots.

Wichita: Demand moderate; supply sufficient; 50% $110, f.o.b. plant; 55%, no quotations, no offerings.

Omaha: Demand limited; trend easy; supply ample; $110.

Boston: Demand and supply steady; $1.65 a protein unit; converted, 50% $95.

New York: Demand good; trend lower; supply fair; 50% $92.50, 55% $101.50, bulk; 50% $95.50, 55% $104.50.

Ft. Worth: Demand improving; supply sufficient; meat and bone, 50% $102.50 @105.

Portland: Demand good; supply ample; trend unchanged; $2.10 a unit protein.

Ogden: Supply normal; $110 in 100-lb. bags.

St. Paul: Slow demand; adequate supplies; slightly weaker trend; $105@111 for 50% meat and bone meal.

Cincinnati: Demand and supply fair; trend easy; 50% meat and bone scrap $100.

New Orleans: Demand good; supply ample; trend steady; $106@107.50.

Louisville: Demand fair to good; trend steady; supply good; $106@115.

San Francisco: Demand good; supply ample; $2.05 a unit of protein, plus $2.50 for sacks.

Chicago: Demand fair; trend higher; supply light; 50% protein $119.

St. Louis: Demand slow; trend weak; supply short; $108.

Buffalo: Demand fair; trend steady; supply ample; 50% meat scraps $102.50 bulk, $107.50 sacked.

Seattle: Demand good; trend firm; supply ample; 50% protein $107.50, ex-warehouse.

Kansas City: Demand slow; trend weaker; supply adequate for demand which is said to have slipped because of switching to lower price high protein vegetable protein; 50% meat and bone scraps $102.50 @105, sacked.

For DEHYDRATED ALFALFA—

BETTER DISPERSION!
DUST-FREE! FREER FLOWING!
MORE UNIFORM!

CONSOLIDATED BLENDERS INC.

Fremont, Nebr. • Phone Park 1-7000 ®TRADE MARK

FEED GRAINS
KAFIR-MILO
BARLEY - CORN - OATS - WHEAT
From Every Grain Producing Area in United States
CONTINENTAL GRAIN COMPANY

OFFICES:

New York, Chicago, Kansas City, St. Louis, Omaha, Columbus, Memphis, Norfolk, Nashville, Enid, Minneapolis, Louisville, Fort Worth, Buffalo, Toledo, Houston, Galveston, Portland, San Francisco, Vancouver, B.C., Winnipeg, Los Angeles

TERMINAL ELEVATORS:

Kansas City, St. Louis, Chicago, Buffalo, Omaha, Toledo, Columbus, Fort Worth, Portland, Boston, Galveston, Enid, Minneapolis, Norfolk, San Francisco, Nashville, Louisville, Memphis, Houston

MILLFEED

Minneapolis: Quiet market prevailed late in week after fairly good interest at mid-week; light production balanced off lack of demand, however, to hold the price fairly steady. "A little flour business could cause some trouble at this level of demand," observers said; sacked prices: bran $46@46.50, middlings $46.50, red dog $49@52; bulk bran $41.50@42.50, bulk middlings $42@43.50.

Kansas City: Demand strong for sacked feeds; trend stronger for sacked feeds, weaker for bulk middlings; supply bran and shorts tight, especially for sacked feeds; bran $43.50@44.50, shorts $47.50@48.50, sacked; bran $40.25@41, shorts $43.50@44.25, middlings $41.50@42.25, bulk.

Wichita: Demand good for bran, strong for shorts; supply offset for bran, tight for shorts; basis Kansas City: bran $42.25@42.75, shorts $47.25@47.75; bran advanced 75¢, while shorts were unchanged, compared with the preceding week.

Ft. Worth: Demand good; offerings light, especially on bran and shorts; carlots, burlaps, bran $52; gray shorts $57; bulk middlings $51.50, delivered Texas common points; $1.50 higher on bran, 50¢ higher on shorts and $2.50 lower on middlings compared with previous week.

Chicago: Millfeeds took a turn toward lower levels during the week ending April 15th and the opinion was expressed that if running time was up to normal and there was any appreciable pressure of offerings, they probably would have lost still more ground. There was a noticeable lessening in the demand for millfeeds more or less coincident with the decline in wheat the past couple of days; the latter resulting from word that the CCC had finally been able to sell red wheat for export at the East Coast and reports that wheat was being sold in store here at 1¼¢ bu. discount under May wheat price were also an item that affected the feed price structure generally. Quotations: bran, sacked $49.50 and bulk $45; standard midds., sacked $51 and bulk $48; red dog, sacked $52.50 and bulk $49.

Omaha: Demand slow; trend steady; supply limited; sacked bran $42.50; sacked gray shorts $49; bulk standard midds. $44.50, all Omaha basis.

Cincinnati: Demand fair; trend steady to higher; supply adequate; bran $56.50, middlings $58.50.

St. Louis: Demand good; trend steady; supply light; sacked, bran $48.50@49, shorts $52.50@53; bulk, bran $45@45.50, shorts $48.50@49, middlings $47.50@48.

Memphis: Demand fair; trend steady; supply ample; wheat bran $50.80, sacked; gray shorts $55.80, sacked; standard midds. $50.20, bulk.

Boston: Demand fair; supply spotty; bran $61.50@62, middlings $60.50.

Buffalo: Bran and middlings advanced last week on some spot buying and sharply reduced flour mill running time. Prices ended higher after a series of irregular price movements, with losses registered when flour mills raised their projections and gains indicated when they cut them back. There was enough over-all demand to raise prices and sustain the advance. Bulk and sacked bran ended up 50¢ as the $5 differential held steady. Bulk and sacked middlings rose $1 and bulk and sacked red dog held unchanged. Quotations April 15: bulk bran $48.50, sacked $53.50; bulk middlings $50, sacked $55; bulk, red dog $53.50@54.50, sacked $58@59.50.

Philadelphia: Demand spotty; trend unsettled; supply fair; bran $60, standard midds. $62, red dog $65.

New York: Demand excellent; trend upward; supply good; bran $61@61.50, standard midds. $62.50@63.

New Orleans: Demand fair; trend steady; supply adequate; sacked, bran $54.50@55.25, shorts $58@58.75; bulk, bran $50@50.75, shorts $56.50@57.25.

Louisville: Demand fair; trend steady to weak; supply ample; bran $53.60, up 50¢; mixed feed $56.60, up 25¢; shorts $60.10, unchanged; middlings $57.80, down $3.80.

Denver: Demand fair; trend steady; supply ample; shorts $50.75, bran $45.25, mill run $48.20.

Portland: Demand slow; supply ample; trend unchanged; $42.

Ogden: Supply normal; to Utah and Idaho: red bran and mill run $42, middlings $47; to Denver: red bran and mill run $49, middlings $54; to California: red bran and mill run $49.50, middlings $54.50, f.o.b. San Francisco and Los Angeles.

Seattle: Demand fair; trend steady; supply limited; $46, common transit points, carlots.

Los Angeles: Demand fair; trend firmer; supply adequate; standard mill run $46.50@47; red bran $56.50@57.

San Francisco: Demand good; supply tight; millfeed $49; red bran $56.

MINERAL FEED

Ft. Worth: Demand good; supply sufficient; all-purpose granules $90, block $97; mineral phosphorus 6% granules $105, block $110; cattle-sheep mineral 7% phosphorus granules $100, block $107; hog-mineral phosphorus 3½% granules $87, phosphorus 2% $77 (all in 50-lb. paper bags).

Portland: Demand slow; supply ample; trend unchanged; $42.

Ogden: Supply normal; $113 in 50-lb. blocks; $103, granular, 50-lb. bags.

Denver: Demand fair; trend steady; supply ample; $156.

Wichita: Demand moderate; supply sufficient; all-purpose with iodine, 50-lb. blocks $97.50, 100-lb. bags $92.50, f.o.b. plant.

Seattle: Demand fair; trend steady; supply good; mixed mineral $48, ex-warehouse; all-purpose mineral $55, ex-warehouse.

Sioux City: 50-lb. mineral blocks 8.2% phosphorus $92; 7.6% phenothiazine sheep mineral blocks $4 each.

San Francisco: Demand steady; supply good; all-purpose with iodine $70.

MOLASSES

Los Angeles: Demand good; trend unchanged; supply adequate; $22, bulk, f.o.b. tank cars; $22.25, bulk, f.o.b. tank trucks.

Denver: Demand fair; trend steady; supply ample; 12½¢ gal., New Orleans; $21.37 ton, New Orleans.

Boston: Demand steady; supply adequate; 16½¢ gal. in tank cars.

New York: Demand fair; trend steady; supply good; blackstrap 16¢ gal., tank cars, tank wagons, f.o.b. New York.

Ft. Worth: Demand good; supply sufficient; blackstrap 13¢ gal., f.o.b. Houston; delivered Ft. Worth, truck $28.92, seller's market price on date of shipment.

New Orleans: Demand fair; trend steady; supply adequate; 12½¢ gal., tank cars and trucks; 600-lb. customers' drums $8.33.

Memphis: Demand slow; trend upward; supply adequate; blackstrap 12¢ gal., tank car, f.o.b. New Orleans, and $28.50 ton, delivered Memphis, truck.

Minneapolis: Fairly good spot demand; ample supplies; stronger trend; 12½¢ gal., New Orleans; $33.50 ton, delivered, Minneapolis, tank trucks.

Cincinnati: Demand fair; trend steady; supply adequate; 12@12½¢ gal., New Orleans.

Louisville: Demand slow; trend strong; supply normal; 13½¢ gal., tank car lots, f.o.b. Gulf Ports, up ½¢ gal.

Milwaukee: Demand fair; supply good; blackstrap 12½¢ gal., f.o.b. New Orleans.

San Francisco: Demand and supply good; $22, f.o.b. cars, Richmond, Cal.

St. Louis: Demand slow; trend steady; supply adequate; 12¢ gal., New Orleans.

Seattle: Demand fair; trend easy; supply good; $22, f.o.b. Seattle, tank car lots or truck lots.

Atlanta: Demand fair; trend steady; supply limited; citrus $20@22, bulk, f.o.b. Florida, producing plants.

Buffalo: Demand and supply good; trend steady; 16½¢ gal., f.o.b. Albany.

Kansas City: Demand fair; trend steady to stronger; supply adequate; 12½¢ gal., tank cars, New Orleans.

NIACIN

New York: Trend steady; $8 kilo, 10-kilo lots; $8.20 kilo, 5- and 2½-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Ft. Worth: Demand slow; supply sufficient; oat millfeed $48.70; reground oat millfeed 3¼% protein, sacked $24.70.

Portland: Demand slow; supply ample; trend unchanged; rolled $65, ground $62, cleaned $65.

Los Angeles: Demand fair; trend unchanged; supply adequate; pulverized, local production $62, sacked.

Philadelphia: Demand slow; supply fair; pulverized white $54; Canadian oat feed $30.50; domestic oat feed $35.50.

Boston: Demand and supply steady; white pulverized $58; reground oat feed $20.50.

Seattle: Demand and supply fair; trend steady; $52, bulk, truck lots.

Louisville: Demand slow; trend strong; supply good; reground $22.60, rolled $84.80, feeding $79.30, pulverized $83.30, crimped $69.80.

Memphis: Demand poor; trend lower; supply ample; 3¼% protein, reground oat feed $18.75.

Minneapolis: Demand fairly good but not up to expectations for time of the year; ample supplies; slightly firmer trend; feeding rolled oats $78; feeding oatmeal $68; crimped $57; standard pulverized $45.50; reground oat feed $18.

Cincinnati: Demand poor; trend steady; supply adequate; pulverized white oats $49@51.50; rolled $83.

Chicago: Demand slow; trend steady; supply good; reground oat feed $13; fine ground feeding oatmeal $69@70; feeding rolled oats $78@79.

OYSTER SHELL

Portland: Demand good; supply ample; trend unchanged; western $34, eastern $39, grade grits $22, shell flour $24.

Los Angeles: Demand fair; trend unchanged; supply ample; $14.80.

Boston: Demand and supply steady; $26.02 in paper.

New Orleans: Demand good; trend firm; supply ample; $24.50@25.

Louisville: Demand good; trend steady; supply normal; in paper bags, 80-lb. $23.45, 50-lb. $23.90, 25-lb. $25.95.

Cincinnati: Demand fair; trend steady; supply adequate; $24.45.

San Francisco: Demand fair; supply ample; local $15, eastern $26.

Seattle: Demand and trend steady; supply good; eastern $36, carlots.

PEANUT OIL MEAL

Milwaukee: Demand and supply fair; 26% $42.

Atlanta: Demand fair; trend steady; supply limited; 45% $62, f.o.b. Alabama producing mills.

PEAT MOSS

San Francisco: Demand and supply fair; $3.65 bale.

Chicago: Demand good; trend steady; supply: American short, Canadian good; $3.85@3.95, standard 7½ cu. ft. bale.

Los Angeles: Demand and trend steady; supply ample; Canadian, 6.1 cu. ft. bales $3.75.

Philadelphia: Demand good; trend unsettled; supply very scarce; $3 bale, f.o.b. pier.

Boston: Demand and supply steady; $3.15 bale, in carlots.

New York: Demand good; trend steady; supply short; Canadian, 7 cu. ft. bale, veneer wrapped $3.32, f.o.b.; German, 7½ cu. ft. bale $3.95, at dock, New York.

Portland: Demand good; supply ample; trend unchanged; $3 bale.

Seattle: Demand and supply good; trend firm; $2.50 bale, truck lots.

POTASSIUM IODIDE, U.S.P.

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures, 250-lb. drums $1.35; 200 lb. in 100-lb. drums $1.35; 100-lb. drums $1.38; 25-lb. drums $1.41, f.o.b. Cincinnati.

Chicago: Demand fair; trend steady; supply ample; 90% KI stabilized with calcium stearate, 200 lb. in 100-lb. cartons $1.30; 100-lb. cartons $1.32; 25-lb. cartons $1.45; freight prepaid to destination.

RIBOFLAVIN

New York: Trend steady; feed grade (in feed supplements) 4½¢ gm. in 3.36 to 16 gm./lb. mixtures, freight paid or paid to destination.

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gram in less than ton lots in 3.36 to 16 gm./lb. mixtures; 3¢ in ton lots or more; freight prepaid or paid to destination.

POULTRY BY-PRODUCTS

Los Angeles: Demand good; trend firm; supply limited; $1.90 a unit of protein.

Boston: Demand fair; supply tight; $108, nominal.

Ft. Worth: Demand excellent; supply limited; 55% protein $112.50, f.o.b. north Texas plants.

Atlanta: Demand fair; trend steady; supply ample; $105.50, f.o.b. Georgia and Alabama producing mills.

Salisbury, Md.: Good demand; limited supply; $102, bulk, f.o.b. producers' plants.

RICE BY-PRODUCTS

San Francisco: Demand good; supply ample; bran $45; polished $49.

Los Angeles: Demand slow; trend easier; supply limited; bran, California production, high fat content $56.

Ft. Worth: Demand fair; offerings light; carlots, rice bran $34@35, f.o.b. south Texas rice mills; hulls $2.50, f.o.b. mills.

Atlanta: Demand good; trend steady; supply limited; bran $49@50.

SCREENINGS

Ft. Worth: Demand slow; supply sufficient; ground grain $28.

Cincinnati: Demand fair; trend steady; supply adequate; malt house $15@19, bulk, Chicago; Canadian $39, bulk, Cincinnati.

Chicago: Demand fair; trend steady; supply adequate; ground grain screenings $37.50, nominal.

Minneapolis: Market continues quiet with almost nothing in the way of supplies and demand limited to bare necessities; lights $10@20; mediums $21@30; heavies $31@40; Canadian bulk $28.50; Canadian ground $37.50; flaxseed screenings $35; oil type flaxseed screenings $45, basis 15%.

Buffalo: Demand good; trend steady to higher; supply fair to poor; ground, sacked $44, New York; unground, bulk $37, New York.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Atlanta: $20.40@20.67.
Buffalo: $25.31@25.45.
Chicago: $24.77@24.90.
Cincinnati: $23.47@23.60.
Des Moines: $25.23@25.35.
Kansas City: $24.85@25.
Memphis: $22.20@22.47.
Minneapolis: $25.92@26.06.
Philadelphia: $24.32@24.95.
St. Louis: $24.14@24.27.

SORGHUMS

Ft. Worth: Demand good; offerings extremely light as most stock is under government loan; carlots, bulk, No. 2 yellow milo $2.48@2.50, delivered Texas common points.

Los Angeles: Demand good; trend stronger; supply adequate; milo $2.62½, bulk.

SOYBEAN OIL MEAL

Memphis: Demand slow; trend steady; supply plentiful; prime 44% solvent $64.

Portland: Demand moderate; trend lower; supply ample; $52, f.o.b. Decatur.

Ft. Worth: Demand fair; supply sufficient; carlots, southern origin, 44%, April $72.60, May-September $74.80; truck, $72.50@75; 50% April $81.40, May-September $84.80.

Ogden: Supply average; $81@86.

Boston: Demand steady; supply ample; 44% $53, 50% $59.50, both bulk, f.o.b. Decatur.

Los Angeles: Demand slackened; trend weaker; increased offerings; $75.90@76.40, bulk.

Denver: Demand fair; trend firmer; supply ample; $80.20.

Wichita: Demand good; supply adequate; 44% $69, 50% $77, f.o.b. Wichita.

Omaha: Demand poor; trend easy; supply adequate; 44% $59.50, bulk.

Philadelphia: Demand and supply fair; trend unsettled; 44% $54, bulk, Decatur.

Louisville: Demand dull; trend weak; supply normal; $66.20, down $2.50.

Milwaukee: Demand good; supply fair; $54, bulk, Decatur.

San Francisco: Demand good; supply ample; $79.90.

St. Louis: Demand slow; trend lower; supply abundant; 44% $65.

New Orleans: Demand fair; trend steady; supply adequate; $66.50@67.

Cincinnati: Demand fair; trend lower; supply adequate; $54@56, bulk, Decatur.

Chicago: Soybean oil meal prices were whittled down still further during the week ending April 15. It was apparent that buyers had been fairly well fixed for supplies earlier in the month and right through up to around the middle of April, but the situation in that respect is said to be not as good for the last half of the current month.. Looking ahead into May, tradesmen seem to feel that it is more or less a wide open proposition for that month and forward. Quotations: 44% protein, bulk, unrestricted $54.50@55 (Decatur basis) and eastern trunk lines $51@51.50; 50% protein, bulk, unrestricted $60 and eastern trunk lines $57.50@58.

Minneapolis: A little more firmness came back into the market in the last half of the week after the price had fallen to $46.50 by Wednesday. The firmer outlook is said to have resulted from slowdowns and shutdowns, a switch to flax processing by plants which had planned to crush soybeans and heavy buying by a large West Coast processor. By April 16 44% meal for shipment to Minnesota was $48.50, bulk, Decatur; 50% was quoted at $59.50, bulk, Decatur, for Minnesota.

Seattle: Demand fair; trend firm; supply ample; $83, carlots.

Atlanta: Demand fair; trend steady; supply ample; 44% $72.

Kansas City: Demand slow; trend steady; supply adequate for demand but not pressing; Kansas City shipment $49.50@50.50, with the lower price mostly on resale meal, bulk, Decatur; unrestricted $55@55.50.

TANKAGE

St. Paul: Slow demand; adequate supplies; slightly weaker trend; $107@109 for 60% digester.

Ft. Worth: Demand fair; supply very scarce; 60% digester $108@107, Ft. Worth.

Omaha: Demand limited; trend easy; supply ample; $112.

Wichita: Demand moderate; supply sufficient; 60% $115, f.o.b. plant.

New Orleans: Demand fair; trend steady; supply adequate; $120.50@122.

Cincinnati: Demand fair; trend steady; supply ample; 60% digester $107.50, Cincinnati.

Chicago: Demand and supply fair; trend higher; 60% protein $112.50 in 100-lb. bags.

St. Louis: Demand slow; trend weak; supply short; $110.

Kansas City: Demand slow; trend weaker; supply adequate for demand but production still light; 60% digester $102.50@105, sacked.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; limited offerings; 6¾¢ lb., f.o.b. north Texas area.

VITAMIN E FEED SUPPLEMENT

New York: Demand and supply good; trend steady; 100-lb. drums $1.50 lb., 25-lb. drums $1.55 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

Rochester, N.Y.: Demand and supply good; trend steady; 100-lb. drums $1.50 lb., 25-lb. drums $1.55 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

Cincinnati: Demand good; trend steady; any quantity in 100-lb. drums $1.50; in 25-lb. drums $1.55; freight allowed to destination.

WHEAT GERM MEAL

New Orleans: Demand fair; trend steady; supply fair; $85@87.

Chicago: Lack of production and continued good demand sent wheat germ meal to $98. The price has advanced extremely rapid during recent weeks. At mid-January the price was as low as $60.

Buffalo: Demand fair; trend steady to higher; supply poor; commercial grade $93.

Truck Grain Rate Increase Delayed

SAN FRANCISCO—Transit trucking rates for the shipment of feed grain in California will not be raised immediately, according to a decision by the California State Public Utilities Commission. The examiner for the commission authorized a delay of several weeks, and scheduled new hearings on the subject, to be held April 29-30, and May 1.

During three days of hearings in San Francisco, representatives of the San Francisco and Stockton Grain Exchanges, and of the California Hay, Grain & Feed Dealers Assn. appeared before the examiner to state their objections to the proposed rate increases, requested by representatives of the state's trucking industry.

The PUC qualified the ordered delay by allowing only presentations from the CHGFDA to be heard because of the late entry of the association into the case. The trucking association offered no objection to the continuation.

Scott Edler, attorney for the dealers association, had asked that all ideas and possible evidence be directed to him through the association's offices. Time is short, he said, and all possible help should be given to the efforts of the CHGFDA.

Luke Eales of the Eales-Young Grain Co., Stockton, had testified on the final day, together with B. Lyons of Balfour Guthrie, Ltd., and R. Hopping of the Poultry Producers of Central California.

Earlier, Henry Turner of the Grange Co., Modesto, Cal., pointed out that the increased trucking rates proposed would have a serious effect on operating margins. The result would mean that they would either have to go in the trucking business themselves, or would begin buying more heavily in the eastern grain market to use the transit billing to ship their feeds and grain by rail, Mr. Turner indicated.

The commission authorized the California railroads and connecting highway carriers to increase intrastate freight rates on general commodities by 9%. The raise corresponds to increases in interstate rates granted earlier by the Interstate Commerce Commission.

MANEY BROS. MILL & ELEV. CO.
Minneapolis, Minnesota
Distributors in the Upper Midwest States for
SMALL'S DEHYDRATED ALFALFA MEAL

SMALL'S DEHYDRATED ALFALFA
"For Feeds with a Future"
Archer-Daniels-Midland Co.
Alfalfa Division
P. O. Box 354 • Kansas City, Mo.

COB ABSORBENT FEED BASE
PELLETED LIVESTOCK RATIONS
Makes firm pellets — university approved — will not damage pelleting equipment — hard woody particles removed.
TI-CO INDUSTRIES, INC.
P. O. Box 135 Tipton, Indiana
Phone or Telegraph:
Federal 2-5943, Elwood, Indiana

CHICK OUTPUT

(Continued from page 1)

bringing better egg prices—will be up from a year earlier.

Contrary to Predictions

There have been reports of lagging sales of replacement chicks this spring because of the low egg prices, often below the cost of production, and there were predictions that the March hatch of chicks would be down significantly from a year ago. In fact, earlier USDA figures had indicated at least some decline. Instead, though, March has shown an increase and the January- March total is up somewhat from a year ago, following on the heels of a heavy out-of-season hatch last fall.

With more commercial operations and more expanding integrated programs, it appears that the response to low egg prices isn't what it used to be.

Egg-type chicks hatched during March totaled 120,175,000—up 6% from a year earlier. Production during January-March, USDA reported, totaled 215,527,000—3% more than a year earlier. The February hatch had shown a decrease from a year earlier, and it had appeared that there would be a cutback in March. But the March increase puts the 1959 total ahead of 1958.

Some of the midwestern states are still behind a year earlier in production of egg-type chicks, but other areas are offsetting the decreases or lack of change.

In March, production of egg-type chicks by areas (with 1958 figures in parentheses) was New England, 5,068,000 (5,112,000); Mid-Atlantic, 12,938,000 (12,780,000); east north central, 26,416,000 (26,223,000); west north central, 42,857,000 (42,472,000); south Atlantic, 9,370,000 (6,433,000); east south central, 4,908,000 (3,561,000); west south central, 7,090,000 (5,764,000); mountain, 2,523,000 (2,482,000); Pacific, 9,005,000 (8,079,000).

Area Differences

Meanwhile the number of egg-type chicks in incubators on April 1 was about the same as on April 1 last year, indicating little change from the egg-type hatch in April last year. There were marked differences among areas, with increases in the South and West offsetting decreases in the Northeast and Midwest.

By areas, percentage changes from a year ago were New England, down 24%; middle Atlantic, up 2%; east north central, down 2%; west nortb central, down 3%; south Atlantic, up 27%; east south central, up 13%; west south central, up 11%; mountain states, up 6%; Pacific Coast, up 12%.

More Broiler Chicks

At the same time, the USDA report showed the continued increase in broiler production. Chick production for broiler production in March totaled some 182.2 million—up 20% from a year earlier.

Output the first three months of the year was up 13% A larger April hatch also was in prospect, with broiler-type eggs in incubators up 12% from a year earlier.

CATTLE

(Continued from page 1)

than the seasonal drop in earlier years.

North Central States: Cattle and calves on feed in 9 north central states at 4,262,000 head this April 1 represent an increase of 4%. In most north central states for which estimates are available for both years, the number on feed increased over a year earlier. Exceptions are Indiana, with 9% decline, and Iowa and Illinois (two of the more important feeding states), with no change. Shipments of stocker and feeder cattle into eight corn belt states for which data are available during the period January through March were up 21%.

Five Western States: For five important western states for which comparable data are available (Texas, Colorado, Idaho, Arizona and California), cattle numbers on feed April 1, at 1,096,000 head, were up 23% from April 1, 1958. In California, the leading western state, numbers were up 33%, while in the second ranking state—Colorado—numbers were up 19%.

Marketings and Placements: Marketings of fed cattle during the first quarter of 1959 were 7% larger than a year earlier in the 13 states for which quarterly estimates are available for both years. Total sales of good, choice and prime beef steers out of first hand for slaughter at 7 markets for January through March indicated a sharper increase, but this increase was partially offset by a decline in heifer slaughter.

The number of cattle placed on feed during the January-March period in 13 states was 4% above a year earlier. Placements in the 9 north central states were up only 1%, whereas the combined total placements of Texas, Colorado, Arizona and California showed a 13% increase.

For the 21 states 2,851,000 fed cattle and calves were marketed, and 2,480,000 cattle and calves were placed on feed during the January-March quarter.

Weight of Cattle: A breakdown of April 1 numbers by weight groups in 13 states indicates a 14% increase from a year earlier in the number of cattle weighing over 900 lb. The number weighing under 900 lb. was up 6% from a year earlier.

Time on Feed: Cattle on feed less than three months for the 13 states for which comparable data are available were 6% above April 1, 1958, while the number 3-6 months was up 10% but the number over 6 months was down 6%. As a percent of total April 1, the number on feed less than 3 months was 41%. The number on feed 3-6 months was 55% of the total. Those on feed more than 6 months represented 4% of the total.

Kinds on Feed: In the 21 states now in the quarterly reporting program, steers and steer calves comprised 72% of the cattle and calves on feed April 1, 1959. Heifers and heifer calves made up 27% of the total, while cows and other cattle made up 1%.

Marketing Intentions: In the 13 states for which comparable data are available, cattle feeders reported that out of the cattle and calves on feed April 1 they expect to market 2,372,000 head in April, May and June. If these intentions are carried out, marketings this quarter would be 8% above the same 3-month period of last year.

TRANQUILIZERS

(Continued from page 4)

and physical appearance of infected birds. Lower serum vitamin A levels in infected birds indicated a possibly higher requirement, the scientists noted.

Award Presentation

At the Institute's annual dinner, Dr. Harry E. Steenbock was presented the Borden Award in Nutrition. Dr. Steenbock, emeritus professor of biochemistry at the University of Wisconsin, was honored "for long and continued investigation in the field of mineral metabolism, the relation of ultraviolet light to antirachitic activity, and the physiological chemistry of vitamin A and vitamin D."

Dr. Grace Goldsmith of Tulane University Medical School, received the Osborne-Mendel Award.

The nutrition session was held in conjunction with the annual meeting of the Federation of American Societies for Experimental Biology.

MICROSCOPISTS

(Continued from page 4)

analysis, and Dr. M. J. Caldwell of the Moorman company, discussing scientific feed formulation.

Participating Members

Members of the AAFM participating in the program include Dr. C. Tyson Smith, University of Massachusetts; T. G. Campbell, Central Soya Co.; G. D. Miller, Kansas State College; C. W. Sievert, C. W. Sievert & Associates; E. E. Brown, Texas Agricultural Experiment Station; G. M. Barnhart, Missouri Department of Agriculture; Mr. Gehrt of Moorman; Elizabeth Gordon, Canadian Department of Agriculture; A. W. Creswell, State of Illinois division of foods, dairies and standards, and Wilma Hill and Bruce Schmitt, of the Moorman company.

Subjects to be covered include microscopic identification of mixed fertilizer ingredients; plant histology of soybeans; feedstuffs identification by refractive index; dried milk products; analysis of hydrolyzed feather meals; the sugar beet industry; effect of overheating on nutritional value of protein feedstuffs; quantitative microscopic determinations; identification of trace minerals; flotation techniques, and pepsin digestion procedure.

During the three-day session, those attending will tour the production and research facilities of the Moorman company. A special program of activity for wives of AAFM members has been arranged by Mrs. Wilma Hill of Moorman.

Lilly Sales Higher

INDIANAPOLIS—Eli Lilly & Co.'s consolidated net sales for the first quarter of 1959 were estimated recently at $48,100,000, it has been announced. Sales a year ago were $45,159,242. This year's sales have been surpassed only by the first quarter of 1957, Eugene N. Beesley, president, said. Consolidated net income was estimated at $7 million, which compares with actual earnings of $6,377,158 a year ago. Estimated earnings per share of common stock were 87¢ as compared with 80¢ earned in the first quarter of 1958.

Estimate Lower Hatch

MADISON, WIS. — Wisconsin Department of Agriculture marketing specialists have estimated that the Wisconsin 1959 spring chick hatch will be 5 to 10% less than a year ago.

Speakers Announced For Kansas Group's Event April 30-May 2

WICHITA, KANSAS — Speakers who will discuss, collectively, grain storage, milling, handling, sanitation, surpluses and price supports have been obtained by the Kansas Grain & Feed Dealers Assn., Hutchinson, for the group's 62nd annual convention to be held here at Hotel Broadview April 30-May 2.

These speakers and the subjects which they will cover include:

Dr. Leonard W. Schruben, professor of agricultural economics and grain marketing, Kansas State Unisity, integration at production levels and economics of the grain bank; Zenas Beers, Chicago, regional director, National Plant Food Institute; Dr. Floyd Smith, professor of soils, Kansas State, fertilizer in Kansas; Georgell Douglass, state warehouse examiner, legal aspects of grain bank warehousing; John V. Soppitt, wage-hour division, wage-hour and white-collar employee regulations; Arthur Creten, Jr., Kansas state grain inspection and weighing department, warehousing of grain in Kansas.

Sam D. Fine, chief, Kansas City district, Food & Drug Administration, progress of the sanitation program; J. E. Elstner, officer in charge, grain division, USDA, Kansas City, Mo., "What Constitutes Unevenly Loaded Grain Cars?"; Prof. Norman V. Whitehair, specialist in grain marketing, Kansas State, extension service available to feed and grain dealers; Raymond J. Pollock, director, grain division, Commodity Stabilization Service, Washington; Donald E. Smith, director, CSS commodity office, Kansas City, activities of his office; Wendell Becraft, state administrative officer, Kansas State Agricultural Stabilization committee, ASC price support operations in Kansas; Paul Ross, Wichita Terminal Elevator, Inc., grain handling and milling in Russia, and Madison Clement, Waco, Texas, president, Grain & Feed Dealers National Assn.

Special entertainment for ladies will be provided May 1 and 2 during the program sessions. Ladies are also invited to social hours, lunches and the May 2 evening party, which will include a banquet, show and dance.

CARL R. FIRTH DIES

PHILADELPHIA — Carl R. Firth, 57, who was superintendent of the Tidewater Grain Co. 18 years, suffered a heart attack and died recently in Jefferson Hospital here.

NEW OFFICERS—Congratulations are offered to two new officers of the Nebraska Grain & Feed Dealers Assn. by Madison Clement (left), president, Grain & Feed Dealers National Assn. The officers, elected at the Nebraska group's annual convention in Omaha April 12-14, are Robert T. Bridge (center), Norfolk, president, and Ray Cogil (right), Ogallala, vice president. Mr. Bridge, president, Norfolk Cereal & Flour Co., succeeds Ross Magowan, Gordon. Mr. Cogil is owner-manager of the Ogallala Grain Co. New member of the board of directors succeeding Mr. Cogil is Garrett Duddin, Duddin Elevator, Venango.

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
February 7	1,286	648	778	613	120	800	1,837	1,902
February 14	1,272	668	724	744	130	848	2,063	1,776
February 21	1,229	606	737	877	168	865	1,769	1,967
February 28	1,154	601	843	816	176	829	1,927	1,814
March 7	1,194	524	835	765	197	849	1,962	1,941
March 14	1,221	596	962	783	197	821	1,851	2,046
March 21	1,243	519	787	873	154	883	2,051	1,886
March 28	1,231	496	690	961	183	845	1,931	2,084
April 4	1,229	597	985	877	178	885	1,914	2,021
April 11	1,187	578	865	911	182	882	1,833	1,904

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
February 7	1,094	572	2,932	363	6,233	236	3,104	2,046
February 14	1,168	580	3,084	404	6,270	205	3,263	2,109
February 21	1,129	586	3,070	373	6,419	239	3,202	2,302
February 28	1,269	700	3,214	360	6,626	246	3,228	2,308
March 7	1,295	680	3,143	357	6,888	263	3,278	2,469
March 14	1,326	625	3,164	437	7,094	232	3,708	2,408
March 21	1,219	731	3,384	377	7,305	239	3,514	2,593
March 28	1,273	678	3,376	379	7,440	216	3,661	2,609
April 4	1,356	637	3,307	413	7,173	264	3,712	2,540
April 11	1,247	676	3,332	375	7,382	214	3,640	2,657

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1959	1958
February 7	3,044	396	2,180	339	240	1,074	31,837	29,640
February 14	3,276	412	2,214	382	215	1,163	32,756	29,495
February 21	3,377	511	2,288	393	234	1,130	33,471	30,777
February 28	3,392	509	2,267	343	283	1,164	34,069	30,808
March 7	3,580	450	2,471	345	267	1,176	34,722	30,406
March 14	3,713	575	2,419	363	301	1,068	35,944	29,863
March 21	3,822	494	2,271	356	257	1,165	36,123	29,291
March 28	3,761	505	2,476	350	246	1,213	36,603	30,134
April 4	3,745	559	2,558	232	268	1,207	36,677	31,793
April 11	3,618	488	2,473	329	280	1,245	36,298	33,156

ANIMAL HEALTH

(Continued from page 6)

said, have been criticized for their activity in the drug field. But, he added, "it has proven necessary and will continue to be necessary at least to a limited extent."

Noting that colleges also intensified their activities in drug and other applied research, he said it is hoped that in the future there will be greater emphasis on basic research at the college level.

Dr. Glista also outlined some of his firm's work with drugs and coccidiosis, and he said research on drugs was intensified when his group began to obtain certain data showing growth inhibition from some coccidiostats. He described various studies of effects on egg production also, and said "data such as these have not been available from either industry or university sources."

He went on to note that progress is being made rather rapidly by the animal health industry in showing the limitations as well as advantages of each compound marketed.

Dr. Glista described further findings with coccidiosis and coccidiostats and their beneficial effects, and he said that as this type of data becomes more available, "we will discontinue this phase of our research work."

"If we are to maintain a clear-cut objective approach," he said, "then we must rely on you to present all of the facts. Our more intense research activities have in part been a defensive mechanism."

Another series of Wirthmore studies outlined by Dr. Glista was that on coccidiosis vaccination. A report on the work has been released to experiment station pathologists in the firm's area. As a result of the findings, he said, there are indications of research activity in a number of experiment stations which had not been actively pursuing coccidiosis studies.

"We are now seeing indications of a customer-supplier relationship at a research level which will contribute far more to sales through a cooperative approach than a vigorous sales campaign alone," Dr. Glista said. "It will be necessary to advertise and sell products, but the new look will mean a sounder approach in merchandising both our product and yours."

WORKABLE RELATIONSHIP BETWEEN FEED CONTROL OFFICIALS AND FEED ADDITIVES MANUFACTURERS—Eugene H. Holeman, director and state chemist, Tennessee division of foods, drugs and dairies, Nashville, said the feed control official must pass on three major questions before the medicated or supplemented feed can be fed.

They are: "(1) Is the feed additive actually present in the mix and is the additive present in the amount guaranteed on the label? (2) Is the amount guaranteed the correct amount to heal the condition treated? and (3) Do any residues contaminate the meat, milk or eggs used for human food?"

Mr. Holeman remarked that when the control official tries to arrive at a fair answer to each of the questions, he will "assure himself of the need and safety of the feed additive in the first place." He said that under the new chemical additive law, the Food & Drug Administration and state control departments "insist on adequate proof of the safety of the chemical additive before other tests are made on the ingredients."

He said a new drug application for a chemotherapeutic agent must give clinical background and proof of dosage forms and amounts and "we should learn of adverse reactions or side effects which may occur, and if any toxic residue remains."

Mr. Holeman commented further, "No state control official has the budget, personnel or facilities to make these studies nor does the official have the time to give the exhaustive library work to dig out of published literature the application of feed additives." He asked, "Where is he to get this information in order to pass on the additive formula? Primarily, he must look to the chemical and drug manufacturers and feed manufacturers with research facilities to supply the information."

He provided suggestions for improving relationships among feed additive manufacturers, users and control officials.

Mr. Holeman said most of the information needed for appraising a feed additive is in the manufacturer's research and development departments. He advised the manufacturer to prepare a brief summary for each medicated feed formula.

"Show (a) the need and safety, (b) the condition to be treated, (c) the amounts needed for the treatment, (d) the ingredients in the base additive mix, (e) precautions or warnings for the feeder and (f) a method for both qualitative and quantitative analysis."

He said some states are equipped with adequate means for testing medicated feeds. Manufacturers were advised that if their feed additive product has been accepted by Les Bopst, state chemist of Maryland, has been accepted by Dr. Forrest Quackenbush, state chemist of Indiana or has been submitted to Bruce Poundstone, secretary, Association of American Feed Control Officials, to make these facts known in their request for registration.

Mr. Holeman informed his listeners that Dr. Quackenbush, chairman, medicated feed section, AAFCO, is now conducting a national survey of state laboratories and their facilities for medicated feed analysis. "He has organized task groups to collaborate with him and the Association of Official Agricultural Chemists in working out methods for analyzing feed additives," he said.

BEEF PRODUCTION METHODS—Dr. John Matsushima, associate professor of animal husbandry, University of Nebraska, discussing developments in cattle feeding, said that at present 70% of the beef cattle in the major beef producing areas are either fed stilbestrol or implanted with the additive.

He referred to various agricultural experiments which show that:

"The addition of 5-10 mg. stilbestrol in the daily ration will increase animal gains and feed efficiency from 7 to 20%.

"Response from stilbestrol is greater when added to high energy rations as compared to low energy rations.

"Steers respond more to stilbestrol than do fattening heifers.

"For most age groups of fattening cattle, if stilbestrol has been introduced in the ration, it should not be removed to obtain its maximum effect.

"If dehydrated alfalfa is fed in the fattening ration, the response from stilbestrol appears to be reduced. However, feeding of stilbestrol with a ration containing dehydrated alfalfa promotes greater cattle gains than feeding one without the other.

"Objections and criticism have been raised in the reduction of carcass grades by feeding stilbestrol. However, available data on this matter seem to vary.

"When proper levels of stilbestrol implants are used, the effects in promoting animal gains and other performances seem to parallel those of oral stilbestrol administration."

Dr. Matsushima also discussed other additives used in cattle feeds.

THE SIGNIFICANCE OF TASTE SENSATIONS IN FARM ANIMALS—Describing research on the sense of taste in animals, Dr. Morley R. Kare of the veterinary physiology department at Cornell University said, "The conclusion is obvious that a man cannot use his senses as a guide for what will appeal to or offend a domestic animal. We feel an entire area for fruitful investigation is opening, rather than a search for an elixir or wonder flavor."

At the outset, Dr. Kare said that commonly the word "taste" is used to describe the collective sensations of smell, taste, texture and other factors, However, he concentrated his comments on the narrow meaning of taste—the sensation mediated through the taste buds of the mouth. He also discussed data on two animals—the chick and the calf.

Chicks can taste, he noted, but their reaction to some stimuli is not parallel to that of humans. For example, they were found indifferent to common sugars, and they were offended by certain flavors humans find pleasant. Dr. Kare also mentioned that since a flavor must go into solution to stimulate taste receptors, the fowl (producing little saliva) has relatively slight perception of flavor in food. From this, one can conclude that generally an additive, nutrient or medicament present in small quantities has little or no effect in the feed tastewise.

Dr. Kare said Cornell workers had studied many common synthetic flavors, essential oils and artificial sweeteners, with none suggesting a value in poultry feed.

It was concluded, he continued, that odor or aroma was of little or no consequence in selection of food by the fowl. Smell could be a factor in food selection by the ruminant, however, he added. Cornell has done no original work in this latter area.

The ruminant has a sense of taste, Dr. Kare said, but it is different from that of the human. For example, the calf will exhibit a high degree of preference for a 1% sucrose solution, but this preference was not parallel for a 1% fructose solution, which is sweeter to humans. Unlike the fowl, relatively small amounts of sucrose used as a coating in feed were perceived by the calf.

Dr. Kare said many other factors enter into the taste problem, too. For example, temperature affects taste.

"One problem . . . is the masking of the flavor of medicaments," Dr. Kare said. "Ill-founded claims of commercial flavors have misled people into believing an all-purpose masking agent would solve the problem. The simple addition of cherry or strawberry flavor or, for that matter, anise, will probably be a waste of time.

"However, if we get down to a specific medicament and a single species, we can be helpful. The first thing is to establish whether the medicament is truly offensive to the animal for which it is made. If it is, we can ascertain the offending character."

"The area of greatest quantitative use for flavors is on feed," Dr. Kare continued. "We have identified some inexpensive natural products that are highly preferred by calves and pigs. They impart little aroma or color to the feed, exerting effect largely through taste . . .

"We have conducted 15-week trials with 'candy coated hay pellets' on growing heifers. We observe an immediate advantage which diminishes within a week or two and soon disappears. Our conclusion is that longtime feeding of these materials would be to no advantage. However, where a short transient stimulation to appetite is desirable, they might be advantageous . . . In other studies with pigs we are convinced that a high degree of preference for a material could have real advantages. So far, it would appear that indiscriminate use will merely obscure the temporary gains.

"In summary, I would state that the exploitation of the senses is in its infancy."

ADDITIVE LAW—Whether a drug is used to treat a disease in a farm animal or administered to speed the animal's growth, the new food additives law sets up rigid requirements for testing the drug and assuring its safe use, according to Dr. Bert J. Vos, acting director of the division of pharmacology, bureau of biological and physical sciences, Food and Drug Administration.

He said procedures include biological assay, spectrophotometry, polarography and tracing with radioactive isotopes. In addition, he said, the law requires that the proponent of an additive must supply a description of practical methods for determining the quantity of such additive in or on food and any substances formed in or on food because of its use.

When drugs are given to animals in combination, it is necessary "to show that neither component alters the tissue residue pattern of the other," Dr. Vos pointed out. "Because of the many medicated feeds already on the market, each newcomer is faced with a sizeable task," he said. "Attempts to reduce the problem through metabolic studies are under consideration and appear to offer promise."

PROTECTION OF FOOD AGAINST RADIATION—According to Dr. Frank A. Todd, assistant to the administrator, Agricultural Research Service, field experiments have indicated that total body radiation exposure of animals to 300-600 roentgens provides a dose level which would be expected to kill 50% of the animals within 30 days.

Dr. Todd said shelter, distance and time provide protection against the external radiation of farm animals.

The principal source of internal animal radiation, he said, is edible plants contaminated externally when the fallout first drops on the affected area. "As time passes, and contaminated food and feed are discarded, the principal source of internal radiation for animals and man is from the contamination in the soil which is absorbed through plant roots." Dr. Todd noted that research is in progress to determine ways and means of reclaiming radioactive soil.

MARKETS

(Continued from page 2)

price the producers are getting, it certainly is not a profitable operation. However, many believe that later in the spring the market conditions should improve.

Good demand for corn caused prices to advance 2¢ to 3¢ bu., making the delivered price around $1.45 to $1.47 bu. Cottonseed meal and soybean meal prices remain practically unchanged. Most of the feed ingredient buyers continue to purchase their requirements as needed.

The demand for citrus pulp is not as good as it has been for the past few months. It is reported that some of the smaller processors, who have no storage space, were forced to reduce prices as much as $2.50 ton again this week to get shipping instructions.

Central States

For the week ending April 15, the commercial mixed feed trade in this area seems to have been on pretty much of a seasonal basis. Call for hog and cattle feed has held up well and demand for poultry feed is beginning to become a little better, although it has been dragging up to now. However, with a turn to more seasonal temperatures, manufacturers of formula poultry feeds in this section are anticipating a pickup in the very near future.

The situation with respect to egg prices has not been changed too much and this in turn, if continued for any great length of time, is likely to result in a decline in the demand from feeders of moderate-sized farm flocks.

Corn prices are holding up very well. Not only has the basic corn future at Chicago moved into ground not covered since last August, but, in addition, the spot demand for contract quality corn is such that No. 2 yellow is bringing a premium of 5½¢ bu. over the May price at Chicago. Movement of corn into the terminals is falling far behind expectations based on the size of the all-time high record crop harvested last fall and even though prices for corn are into new high ground for the 1958 crop, pressure of farm work incidental to planting the 1959 crop may continue to restrict the movement from first hands.

South Central

Business in formula feeds is good, about the same as last week. Plants are running steadily but are not overcrowded. Most mills are adding an hour of overtime to each day for a 45-hour week, with an occasional mill on a 90-hour basis. In expectation of a busy week ahead, some firms operated part of last Saturday. But, in most cases, the extra output has not been needed.

Chick starters continue to drag and it is generally conceded that sales volume will be well below that of last year. Demand is picking up for turkey feeds, however, and expectations are for a pretty good season. Broiler feed business is also looking up, in spite of the current low returns.

But, as in the past several months, pig and hog feeds are accounting for over one-half of mill production. Mill operators can't recall any other lengthy period when so much of their business was concentrated in swine feeds. There are some doubts about the desirability of this.

With corn a little easier to buy in the country and bean meals slightly lower, price lists are expected to be down fractionally.

Mountain States

Feed dealers reported this week that sales volume has increased a little over last week and is up "quite a little" from the same time a year ago.

Getting the greatest demand this last week were drylot cattle feeds and chick starter. There has been a slight rise in poultry raising in this area. The drylot cattle feeds have remained the same as a year ago at this time. Most of these feeds are still being purchased for immediate sale and very little for inventory build-up.

Ohio Valley

Much to the disappointment of area farmers and all those associated with the feed industry, winter continues to hang on tenaciously in the Ohio Valley with temperatures that are anything but conducive to normal spring activities. Last weekend, a wet snowstorm blanketed the valley area to further overload the ground with unwanted moisture, and midwinter clothing is still necessary at this midweek for everyone required to be out-of-doors.

As a result, the spring pickup in the sale of formula feeds, which everyone in the industry had been confidently anticipating, has as yet failed to develop. However, business is reported holding at a steady volume, while manufacturers continue hopefully to anticipate increasing tonnages as soon as the weather cooperates.

Area markets for poultry and all grades of eggs are continuing on the weak side with prices off 1@2¢ and some operators reporting abnormally large inventories. While receipts of cattle, hogs and sheep at area stockyards are about normal for this time of the year, prices for most grades of slaughter animals were holding steady to stronger.

Pacific Northwest

Feed ingredient values averaged lower during last week's relatively slow Pacific Northwest trading which saw declines posted by wheat millfeeds, soybean meal and whole corn with milo making the lone advance.

Soybean quotations slipped around $3 ton at Portland and Seattle while millfeed lost $1 ton with corn prices off 25¢. Milo listings gained 50¢ for the trading period.

Feeders and mixers continued to purchase soybean meal and other items on a hand-to-mouth basis with rather unfavorable feeding ratios reflected by the slow and cautious buying interest.

Despite warmer weather which improved western Oregon and Washington pastures, formula feed business remained good with rather heavy supplemental feeding generally expected to rule through April.

Slackened dairy feed sales were offset by a slight increase in the over-all volume of poultry feed movement, trade sources reported.

Ranges in southeastern Oregon counties were in need of additional moisture.

Pacific Northwest alfalfa hay prices held steady at unchanged levels during the week, but trading became noticeably slow as weather turned warm and dried pastures for nearly full utilization.

Offerings of good and top quality alfalfa hay were not pressing with No. 2 green alfalfa selling within a $32 to $33 range, baled and delivered at Portland and Seattle, with top quality hay from barn storages reportedly selling in scattered deals to $35 ton on the same basis.

INDEX OF ADVERTISERS

The index of advertisers is provided as a service to readers and advertisers. The publisher does not assume any liability for errors or omissions.

Abbott Laboratories 60, 61
Aeroglide 66
Agricon, Inc. .....
Agri-Tec Steel Corp. .....
Agri-Tech, Inc. .....
Albers Milling Co. .....
Albumina Supply Co. 71
Allied Chemical Corporation, Plastics & Coal Chem. Div. 52
Allied Mills, Inc. .....
Altman, Singleton & Co. ....
Amburgo Co., Inc. .....
American Agri. Chemical Co.
American Cyanamid Co. ..30, 31
American Dehydrators Assn...
American Elev. & Grain Div..70
American Mill Serv. Co. ...
American Poultry & Hatchery Fed. .....
American Scientific Lab. ...33-36
Anderson Box Co. 48
Andersons, The .....
Anderson, V. D., Co. 80
Arbor Acres Farm 77
Archer-Daniels-Midland Co. ..
Armour & Co. 82
Armstrong, O. B. & Son ...
Associated Feed Products ...95
Assn. of Mill & Elev. Mutual Insurance Co. .....
Aubrey Feed Mills .....
Automatic Eqpt. Mfg. Co. ..

Babcock Poultry Farm, Inc. ..
Bacon, Edward R., Grain Co.
Baker, H. J., & Bro. .....
Baker, J. T., Chem. Co. ....
Barnard & Leas Mfg. Co., Inc. 62
Baroid Chemicals, Inc., Subsidiary of National Lead Co.
Bartlett, C. O., & Snow Co...61
Bates Grain Co. .....
Bauer Bros. Co. .....
Baughman Mfg. Co., Inc. ...14
Baxter, A. E., Engineering Co. 85
Beardstown Mills .....
Bemis Bro. Bag Co. 88, 89
Berg, Paul .....
Bertram Construction .....
Bigelow Sales Co. .....
Bingman Lab., Inc. 58
Biochemical Corp. of America
Black, Sivalls & Bryson, Inc...
Blatchford Calf Meal Co. ...32
Blomfield-Swanson .....
Bordon Company 24
Bowman Feed Prod., Inc. 42
Brewers Yeast Council, Inc...
Brock Mfg. .....
Brower Manufacturing Co. ..82
Burrell, James H., & Co., Inc. 23
Burrows Equipment Co. 71
Burrus Feed Mills .....
Butler Chemical Co. 59
Butler Mfg. Co. 78

Calcium Carbonate Co. 17
Calhoun Beach Hotel .....
California Pellet Mill Co. ...72
Capie, A. B., Co. 65
Cardinal Scale Co. .....
Cargill, Inc. 79
Champion Portable Mill Co...91
Chanfland Mfg. Co. 60
Chase Bag Co. 53
Checkerboard Grain Co. 78
Citrus Processors Assn. .....
Clinton Corn Processing Co...
Clofine, Herbert K. 91
Colby Milling, Inc. 24
Collier Livestock-Feeder Co...
Columbia Phosphate Co. 65
Columbia Quarry Co. 78
Columbian Steel Tank Co. ..
Commercial Solvents Corp. 12, 13
Consolidated Blenders, Inc. ..99
Continental Grain Co. 99
Corn Products Sales Co. ...68
Coronet Phosphate Co. 96
Czarnikow Rionda .....

D. C. A. & Co. .....
Dabney-Hoover Supply Co., Inc. .....
Daffin Mfg. Co. .....
Dakota Ranches Mfg. Div. ...
Dannen Mills, Inc. 19
Darling & Co. .....
Davis, H. C., Sons' Mfg. Co.
Dawe's Laboratories, Inc. 104
Day Company, The 11
Daycom, Inc. 27
Delaware Poultry Laboratories

Devold, Peder, Oil Co. 78
Diamond Alkali Co. .....
Diamond V Mills, Inc. 25
Distillation Products Industries 58, 87
Distillers Feed Research Council 63
Doane Agricultural Service ..
Dorn & Mitchell Laboratories.
Dorsey Trailers .....
Doty Laboratories .....
Douglas Chemical .....
Dow Chemical 68
Dunbar-Kapple .....
Duplex Mill & Mfg. Co. 25
Du Pont de Nemours & Co., Inc., E. I. ...28, 29, 84, 85

Early & Daniel Co. .....
Eastman Chemical Prod., Inc. 72
Ehrsam, J. B., & Sons Mfg. Co., The .....
Elam Grain Co. .....
Elba Corp. of America ....
Erlez Mfg. Co. .....
Eschenheimer, Rudy, Co. ....
Ewing, Ray, Co. 22

Farmers Friend Mineral Co...23
Feed Service Corp. .....
Fischbein, Dave, Co. .....
Flavor Corp. of America 80
Food Mach. & Chem. Corp...47
Forster Mfg. Co. 23
Fox Co. 67
Fruen Milling Co. 7
Fuller Co. .....

Geerlings Feed Mills .....
Gerber Sheet Metal .....
Gooch Feed Mills 44
Gorton-Pew Fisheries 38
Grace Chemical Co. .....
Grain Processing Corp. 80
Grand River Chem. .....
Gump, B. F., Co. .....

Hallet & Carey Co. .....
Hand, Peter, Foundation 3
Harris-Crane, Inc. .....
Harshaw Chemical Co. 70
Hayes and Stolz .....
Haynie Prod., Inc. .....
Heil Co., The .....
Heim Mfg. .....
Henke Mfg. Co. .....
Hess & Clark, Inc. 76
Heterochemical Corp. 86
Highway Equipment Co. ....
Hilltop Laboratories 16
Hoffmann-La Roche, Inc. ....
Hoffman-Taff, Inc. 92
Hogenson Const. Co. .....
Hogg, N. D., Ltd. .....
Holt Products Co. .....
Honeggers' & Co. 20, 21
Honeymead Products Co. ...
Hot Spot Detectors, Inc. ....
Howe Scale Co. 56
Howes, S., Co., Inc. .....
Hubbard Milling Co. .....
Hubbell, Charles H. .....
Hudson Pulp & Paper Corp...66
Hygeno Litter Co. .....
Hyline Poultry Farms .....

Ibberson, T. E., Co. 70
Illinois Soy Products Co. ...
International Minerals & Chemical Corp. 37
International Paper Co. ....
International Salt Co., Inc...
Iowa Limestone Co. .....
Iowa Portable Mill Co. .....

Jackson, Gilbert, Co., Inc...
Jacobson Machine Works 16
Jersee Co. .....
Johns-Manville .....

Kalo Co., The .....
Kansas Soya Prod. Co., Inc...
Kaos & Company 92
Kellogg, Spencer, & Sons, Inc.
Kem Mfg. Co. .....
Kent Feeds .....
Kent, Percy, Bag Co., Inc...
Key Alfalfa Dehydrators ....
Keystone Steel & Wire Co...
Kimber Farms .....
Kindstrom-Schmoll Co. .....
Koelsch, Charles J., Grain Co.

Koppers Co., Inc. .....
Kraft Bag Corp. 50
Kraft Foods Co. .....

Laboratory Construction Co...76
LaBudde Feed & Grain Co...95
Land O'Lakes Creameries, Inc.
Landers Mill Mfg. Co. .....
Lauhoff Grain Co. 56
Leach Mfg. Co. 48
LeGear, Dr., Inc. 90
Lennox Industries .....
Levens Mfg. Co. .....
Lilly, Eli, & Co. 57
Lima Armature Works .....
Limestone Products Corp. of America 69
Loncala Phosphate Co. .....
Longhorn Eng. Co. .....

McCabe Grain Co., Ltd. 75
Maney Bros. Mill & Elev. Co. 100
Martin, Theo. W., & Son ....
Mayo Shell Corp. 51
Merck & Co. 5
Mid-Continent Grain Co. 46
Mid-States Mill Mach. Co...
Midwest Alfalfa 62
Midwest Dried Milk Co. ....
Milbrew Co. .....
Miller, Mel, & Co., Inc. ....
Miller Publishing Co., The ...
Minneapolis Sewing Mach. Co.
Minnesota Linseed Oil Co. ...77
Minnesota Specialty Co., Inc. 85
Monsanto Chemical Co. ....
Morton Salt Co. 45
Murphy Products Co. .....
Myers-Sherman Co. .....

Nagel, Herman, Co. 95
Nati. Alfalfa Dehydrating & Mfg. Co. .....
National Distillers Prod. Co...90
National Mfg. & Stamping Co.
National Molasses Co. 95
National Oats Co. .....
National Renderers Assn. 70
National Vitamin Products Co.
Nellis Feed Co. 69
New Century Co., The .....
New England By-Prod. Corp...38
New Holland Machine Co. ...
Nichols, Incorporated 73
Nootbaar, H. V., & Co. .....
Nopco Chemical Co. 16
North American Mfg. Co. ..86
North American Trading & Import Co. .....
North Carolina Granite Corp. 24
Northwest Brewers Yeast, Inc.
Nor-Vell, Inc. .....
Nutrena Mills, Inc. 79

Oakes Mfg. Co. .....
Olavarria & Co., Inc. .....
Oyster Shell Corp. 85
Oyster Shell Prod. Co. 64

Pabst Sales Co. 19, 74
Pannier Bulk Feeder, Inc. 91
Panogen Co. .....
Paper-Calmenson & Co. 64
Park, Philip R., Inc. .....
Parkersburg Rig & Reel Co...
Parks, J. P., Co. 7
Parrish & Heimbecker 32
Parrish, N. K. .....
Paxton Processing Co. 95
Pay Way Feed Mills, Inc.....
Peavey, F. H., & Co. 58
Peerless Equip. Co., Inc. ....
Penick, S. B. 81
Peterson Breeding Farm ....
Pfizer, Chas., & Co. 54, 55
Phelps Dodge Refining Corp..
Plich's Poultry Breeding Farms
Pillsbury Co., The .....
Pittsburgh Plate Glass Co. ..
Pless, Joe N., Co. .....
Power Curve Conveyor Co. ..
Prater Pulverizer Co. 43
Pratt Labs., Inc. .....
Productive Acres Mfg. Co. ..69
Publicker Industries, Inc. 83

Quaker Oats Co. .....

Ralston Purina Co. .....
Rapids Machinery Co. 32
Raymond Bag Corporation ..27
Reed, Gladwin A., Co. .....
Red River Alfalfa Co. .....
Reliance Feed Co. .....
Richardson, James, & Sons..60

Richardson Scale Co. .....
Riley Feed Co. .....
Rion Crush Stone Corp. 86
Ripco, Inc. .....
River Rest Turkey Sales, Inc.
Rosner-Hixson Laboratories ..
Ross Machine & Mill Supply..95
Ryde & Co. 47

S. & H. Lab. 58
St. Regis Paper Co. .....
Salsbury's, Dr., Labs. 48, 41
Sargent Calcium Co. .....
Save-Way Feed Mills .....
Scanlan, Ivan, & Co. .....
Schenley Distillers, Inc. 92
Schuster-Wise Gr. & Feed Co.
Schutte Puverizer Co., Inc...
Screw Conveyor Corp. 28
Seagram, Joseph E., & Sons, Inc. 49
Seco, Inc. .....
Sedberry, J. B. 93
Seedburo Equipment Co. 90
Shenzer Mfg. .....
Shelby Mfg. .....
Shellbuilder Co. 75
Shuford, J. C., & Co. .....
Sievert, C. W. 64
Simonsen Mfg. Co. 38
Small, The W. J., Co. 100
Smith, A. O. .....
Smith, Edward E., & Co. ...
Sohio Chemical Co. .....
Soluble Nutrients, Inc. 93
Southwest Mill Supply Co. ..
Sparks-Waters-Farnen, Inc. ..
Specifide, Inc. .....
Spencer Kellogg & Sons, Inc
Sprout, Waldron & Co., Inc...
Staley Milling Co. .....
Standard Brands, Inc. 48, 52, 69
Stearns Magnetic Products ..
Sterwin Chemicals Inc. 9
Stone Mountain Grit Co. ....
Strong-Scott Mfg. Co. 75
Sudenga Industries .....
Sunset Feed & Grain Co. 11
Superior Feed Co. .....
Sutorbilt Corp. 44
Swanson, Carroll, Sales Co...61
Syntha Lab. .....

T. D. F. Company .....
Takamine Laboratory 15
Taste Engineering, Inc. ....
Texas Mill Equipment Co. ...
Thayer Scale Corp. 84
Ti-Co Industries 100
Tobias Enterprises 42
Toledo Scale .....
Toxite Laboratories 48

Ultra-Life Laboratories, Inc...51
Union Bag-Camp Paper Corp.
Union Special Machine Co...
U. S. Industrial Chem. Co...
Universal Hoist Co. .....
Upjohn Company, The .....

Van Dusen Harrington Co. ..58
Vantress, Chas., Farms, Inc...
Vineland Poultry Lab. .....
Vitamins, Inc. 47
Vitron Corp. .....
Vy Lactos Laboratories, Inc..

W-W Grinder Corporation ..60
Wallace & Tiernan Inc. .....
Warren-Douglas Chemical Co.
Wells, Ralph, & Co. .....
Wenger Mixer Mfg. Co. 58
Werts Feed Co. .....
Western Condensing Co. 65
Western Yeast Co. 66
West Virginia Pulp & Paper Co. .....
White Laboratories, Inc. ...33-36
White Shell Corp. 23
Whitmoyer Laboratories, Inc. 46
Whitten Co. .....
Wilhoit Laboratory .....
Wilson & Co. .....
Wilson, R. S., Co. .....
Winona Attrition Mill Co. ...
Wirthmore Feeds 39
Wisconsin Alumni Research Foundation .....
Woodward & Dickerson, Inc..
Wyatt Mfg. .....
Wyeth Lab. .....

Young, John F., Co. 29

Dawe's specialists

This is the VITAMELK program:

1. VITAMELK—a comprehensive vitamin, trace mineral, antibiotic and unidentified factors fortifier. Full fortification in one package.
2. COMPLETE FORMULATIONS for farm-tested feeds.
3. TAG INFORMATION for today's complicated feed tag requirements.
4. COMPLETE FEEDER INSTRUCTIONS on how to use Vitamelk fortified feeds to best take advantage of their great built-in power.
5. DAWE'S QUALITY CONTROL laboratories are a remarkable help in solving special problems.
6. MERCHANDISING and sales counsel.
7. CONTINUING RESPONSIBILITY for applying the latest nutritional knowledge to your feeds.

on your staff... but not on your payroll

THE VITAMELK PROGRAM

When you program your feed business the Vitamelk way, you establish a nutritional laboratory affiliation. You are backed by the vast resources and qualified personnel of Dawe's. You have a direct line to nutritionists, chemists, laboratory technicians, production people, field men, merchandisers . . . specialists all . . . men who know the intricacies of today's complex feed industry. Their goal is helping you program a more successful feed business. In effect, they are on your staff, but on our payroll.

Today's modern Vitamelk and the Vitamelk programs are based on over 30 years' specialization in vitamin nutrition and feed fortification. When you fortify with Vitamelk, Dawe's nutrition, merchandising, manufacturing and quality control know-how is yours, yet you pay for Vitamelk only. Write today for details of specific Vitamelk programs for poultry, swine, beef and dairy cattle.

Dawe's

DAWE'S LABORATORIES, INC.

4800 South Richmond Street
Chicago 32, Illinois

World's Oldest and Largest Specialists in Feed Fortification

FOREIGN OFFICES:
Belgium—13 Courte rue des Claires, Antwerp • **Italy**—Corso Magenta 81, Milan
Venezuela—Apartado 3050, Caracas • **Mexico**—Apartado 25770, Mexico 12, D. F.